Cement MILL SECTION of

Concrete

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Cement Labels I Have Met

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Bethlehem, Pa.

In order that I may assist you to fully appreciate the meaning and true worth of this narrative, I would ask you to go back with me a period of forty years. The great contrast in the cement industry then with what is now is will serve to point out the struggles and reverses that were overcome, and along with the needed improvements and innovations in the industry came the birth of the cement label.

The First Mills

As is so true of nearly every infant industry, this one also faced and overcame many trials and tribulations. The geniuses of this business were at that time considered dreamers and experimenters, which latter, of course, they were. But, as they plodded on and on, through many vicissitudes, they finally proved to the world that portland cement was, indeed, a very useful article of commerce. Little did they conceive, however, that the time would come, even before the expiration of the last decade of the nineteenth century, when portland cement would become one of the most necessary articles of our every-day life and that it would, also, prove to be practically indispensable. Let us, then, look back to the early '80s and, with our mind's eye glancing over the map of the United States, try to recall the several locations where the pioneers were then busily and bravely engaged in the manufacture of the first portland cement made in this country. Can you think of half a dozen such plants that then existed? Certainly there were only a few in those days, and the Lehigh belt claimed the greater percentage of the total number of mills and their combined output. The Empire State was the "mother" of practically the remainder.

Expansion

It was not many years, however, before the business began to expand. Chemistry as then employed in the laboratories of the mills was somewhat crude and incomplete. I think they could scarcely be called "laboratories" then as compared with our present-day, up-to-date and fully-equipped "dissecting" rooms, where the sample of cement receives all manner of rough treatment at the hands of the chemists. It was seen that more exhaustive tests would have to be made if the product were to become in any way nearly uniform from day to day and from month to month. In the early '90s the time had already arrived when the tensile strength test was in vogue and this was about the only test that was insisted upon by the purchaser or contractor. However, we were soon to have both the "neat" and the "aggregate" briquette test for tensile strength; the boiling and freezing tests; the fineness and the 28-day, 15% gain tensile test, and, of course, the various chemical tests for such elements as sulfur, lime, etc.

The methods of testing the cement became more uniform as time went on; chemists and engineering societies delved more deeply into the mysteries and apparent idiosyncrasies of the raw materials and the finished product. By their aid great strides were made and thus was firmly established the foundation of the only great industry that has consistently increased its output from time to time, and within a period of thirty years multiplied its original total yearly production a thousandfold. It was also shown that portland cement was not a product peculiar to any particular location or set of raw materials. All over the country prospecting was indulged in and as new companies were organized and operations commenced, the industry was an infant no longer, and by the end of the nineteenth century hundreds of mills were sending their black smoke and gray dust skyward.

Marking the Bags and Barrels

The question of marketing the product in an attractive container began to receive attention in the early days of the business. I have said that the methods of testing were crude in the early days, and this held true also of the method of marking the bags and barrels in which the cement was shipped from the mills. As there was not much, or any, competition then it was not deemed of vital importance to pay serious attention to the attractiveness or unattractiveness of the containers. Soon, however, this question was to receive its merited attention, not only because of competition but also from an economical standpoint. It will be interesting to most of you to know how the barrels and bags were marked before the adoption of the cement label.

So far as the barrels were concerned, it was a comparatively simple matter, as they were not marked until they were packed and the barrel heads put in place. A thin liquid paint was then prepared, the principal ingredient being lamp-black. A round stencil, or template, about the size of the barrel head, was cut out of heavy tin. This stencil contained the name of the company, its location, the brand and, sometimes, the net weight of the cement contained in the barrel. There were several brands then manufactured by some of the mills and for each brand there was provided a stencil. After the packer had completed the "heading" of the barrels, they were ready for stenciling. The dust and cement were carefully brushed from the top of the barrel and the heads were then stencilled by laying the stencil in place and applying the lamp-black coloring with a brush. This operation did not require much work, but the finished job was rarely very satisfactory or appealing to the eye, as sometimes the coloring would "run" and this would cause the lettering on the barrel heads to become rough and crude.

The same method of applying the marking to the cloth bags was also employed, with the exception that the stencils were rectangular in shape and the lettering on them was perhaps more bold and heavy in some places. The bags, however, were stencilled before they were filled with the cement, and it was much more of a task to mark the bags than it was to mark the barrels. Each bag had to be carefully stretched to remove the creases and folds in order that the lettering would become as neat as possible. It can be seen, therefore, that stencilling one barrel meant only one simple operation, whereas it required more than four times as much labor and material to properly mark the bags. Some of the bags, however, as received from the bag manufacturer were already printed, but when a scarcity of bags was encountered, and if the mill had an excess quantity of one brand on hand, it was deemed expedient to turn the bags inside out and stencil thereon the brand for the bags that were not on hand and which were slow in coming back from the original consignees. It can readily be imagined that soon there was bound to be a grand confusion in the cement trade so far as the empty bags were concerned. Bags would be returned by consumers to mills that did not own them, and this occasioned much re-handling and annoyance. Many consumers took it for granted that a cement bag was a cement bag, regardless of the brand or manufacturer whose name was printed theron, and until they were taught that this was far from being the case, mistakes and misunderstandings occurred times without number.

Adoption of the Cement Label

In order that each brand of cement might stand out distinctively and that economy might prevail in the packing-house, the cement label was decided upon. The cloth bag manufacturer, of course, demanded greater compensation for the new kind of bags, but, nevertheless, the system was put into effect and before very long the cloth and paper bags were neatly printed with the labels and trade-marks of the various cement manufacturers at the bag factories. We can believe that when the first shipment of newly-printed, brightly- labelled bags arrived at the packing-house of the mill that put this innovation into effect, everyone was happy, from the waterboy on up to the "boss" himself, may the latter have been the foreman of the "stock-house," or the superintendent of the mill, or the very owner himself. I say there must have been rejoicing in the rank and file of the cement men, because this was a big step forward and the attractive bags were the one bright spot in the dusty background of the mills.

Previous to the first printing of the label on the bags, was begun the printing of paper labels for the tops of the barrels, and then, instead of seeing a pail of lamp-black in the packing-house, our eyes gazed upon a bucket of paste, with which the labels were pasted onto the barrel heads. Gone, too, was the "artist" with the brush, who "lamp-blacked" the walls and doors of the buildings with his impulsive creations! You all remember him, you of the early days, and possibly I am speaking to some of those very "artists" now. If so, blest be the "days of Auld Lang Syne!"

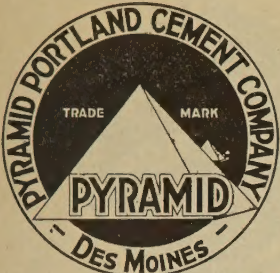
The Miniature Label

So much for the manufacturing end of the business, but what about the office, where the payroll was made up *once a month;* where letters were written to the buyer, quoting him prices and acknowledging orders, remittances, etc? Yes, what about the office, where all these transactions had to be copied in a tissue paper copying book by the aid of wet rags and a miniature hydraulic press? Was it thought that the severely plain, unembellished letterheads, billheads, etc., were not in need of enhancing? Surely, a facsimile of the label, as used on the bags and barrels, would be very appropriate for the office needs, and praise be to the genius who conceived the idea of the miniature cement label! There is no information at hand as to which one of the companies was the first one to adopt the miniature label, but it certainly was another step in the right direction. The adoption by the cement companies of the miniature label has been an incentive to other manufacturers in other lines of industry, and the miniature label, or trademark, is now a very common means of portraying to the public the product and brand name of various lines of manufacture. To the cement manufacturers, therefore, should be given credit for the creation of the miniature label, its attractiveness and great popularity.

Like the first cement bag that was printed with its colored label, so the first letterhead with its colored miniature label must have caused a ripple of speculation among the cement men. Competing companies, no doubt, saw that it was an excellent idea, and, one by one, they fell in line, endeavoring to outdo each other in the matter of design and attractiveness of the label. Much, no doubt, could be written on this subject, and it would prove very interesting if we could know the history of each particular label, especially with respect to the name of the brand and its relation to the locality in which the cement is produced. Many plants simply adopted a brand to conform with the locality. Others enlarged upon the idea of permanence, strength and durability. In this connection it might be well to point out the instance of one of the first plants to adopt a brand (and, possibly, the very first one), the same being the old American Cement Co., in the little town of Egypt, Pa. When the time came to adopt their brand it is presumed that some object should be used which would at one and the same time denote the "location" of the plant and the "strength" and "enduring" qualities of the cement. What was more natural than that they should turn to the land of Egypt and adopt the Sphinx and Pyramids as being the proper objects to depict on their brands? If we study closely the various other brands of labels, we will find that many of them were created with one or both of these features in mind. Much more remains to be said along this line, and as the labels are reproduced in Concrete from time to time appropriate remarks will be forthcoming with regard to the ones in each issue.

The Collection of Labels

A few words would be in order at this time with reference to the writer's collection of these miniature cement labels. In April, 1906, was conceived the idea of creating a small collection of such trade-marks, feeling



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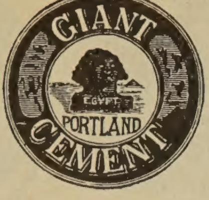

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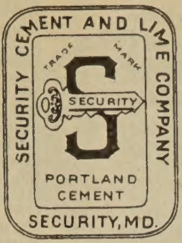

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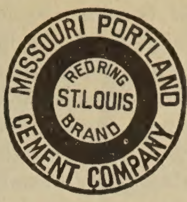

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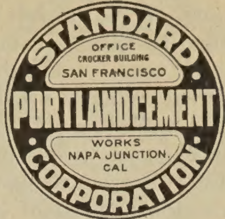

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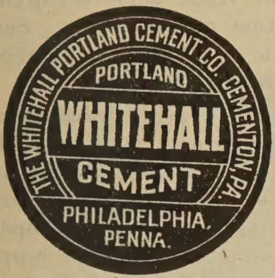

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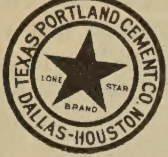

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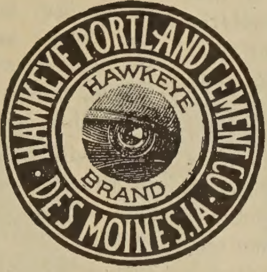
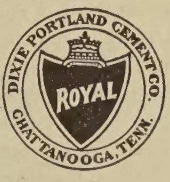
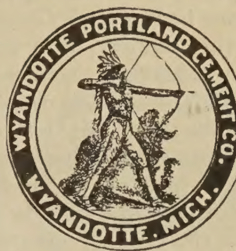

HAWKEYE PORTLAND CEMENT CO.
HAWKEYE
BRAND
DES MOINES, IA.

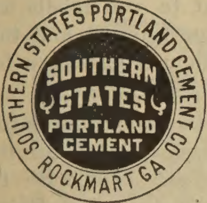
8


DIXIE PORTLAND CEMENT CO.
ROYAL
CHATTANOOGA, TENN.

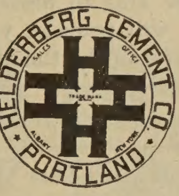
9.


WYANDOTTE PORTLAND CEMENT CO.
WYANDOTTE, MICH.

10.


SOUTHERN STATES PORTLAND CEMENT CO
SOUTHERN STATES PORTLAND CEMENT
ROCKMART GA

11



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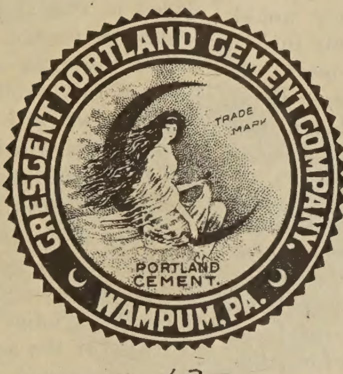

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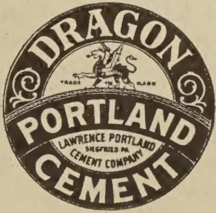
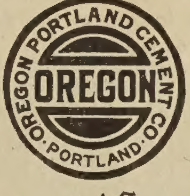

DRAGON
TRADE MARK
PORTLAND
LAWRENCE PORTLAND SIEGFRIED PA CEMENT COMPANY
CEMENT

14



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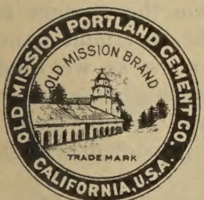
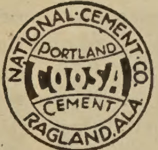

OLD MISSION PORTLAND CEMENT CO.
OLD MISSION BRAND
TRADE MARK
CALIFORNIA, U.S.A.

16



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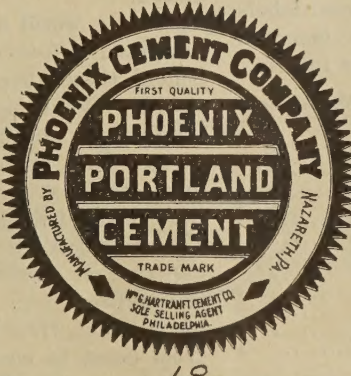

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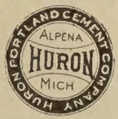

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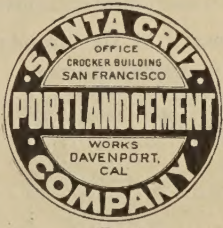

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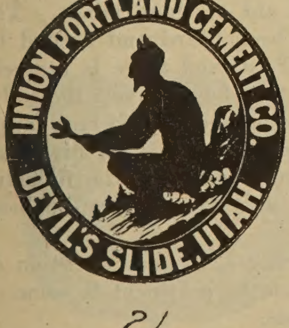
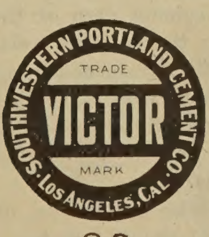

UNION PORTLAND CEMENT CO.
DEVIL'S SLIDE, UTAH.

21.



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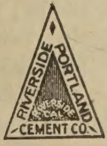

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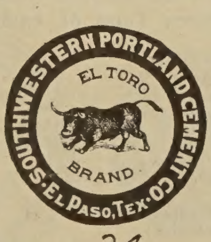
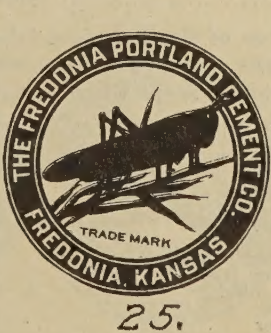

SOUTHWESTERN PORTLAND CEMENT CO.
EL TORO
BRAND
EL PASO, TEX.

24.


THE FREDONIA PORTLAND CEMENT CO.
TRADE MARK
FREDONIA, KANSAS

25.

AMERICAN CEMENT LABELS

that in years to come it would be a matter of great interest and historic value to have copies of all labels and trade-marks of the cement manufacturers of that period. It was also felt that the time would come when many of the brands would become obsolete and extinct, due to various causes which need not be dwelt upon at this time. Immediately upon conception of the idea of creating such a collection, correspondence was commenced with the different cement manufacturers of this country, and within a comparatively short period of time the collection comprised about fifty brands. This really was the nucleus of the later and now completed collection. Feeling that the purpose had not been accomplished at that time with the small number of brands at hand, my circle of correspondence was enlarged, and within a year's time correspondence was held regularly with persons in England, Germany, Belgium, Japan, and others in this country, who were interested in the same matter. My foreign correspondents and myself exchanged miniature labels from time to time, and at the same time no stone was left unturned that would help me in securing any obsolete or new brands that were on the American market. I have in mind one manufacturer in Nova Scotia who regularly received a letter from me, for five or six years, requesting a copy of their trade-mark. Invariably reply was received in the negative, and in the last instance it was intimated that they would publish their label soon. It is presumed that my insistence finally persuaded them to adopt a trade-mark, although nothing has been heard by the writer from them since, and the reason their label is not included in the collection is due to the fact that they failed to furnish me with a copy of it.

In this manner the collection grew from day to day, until it has reached a total of 579 brands of various companies, representing many countries. This collection does not include, however, every known brand, as not all of the manufacturers submitted copies of their labels. If any such brands are omitted, therefore, the reason is evident, and the writer would be glad to be advised of the circumstance, in order that these labels may be included in the collection, which will be mounted and placed on public exhibition in the very near future.

A summary of the brands represented in the collection, by countries, follows:

United States	258	Cuba	2
Germany	121	Wales	2
Belgium	71	Scotland	1
England	51	Ireland	1
Canada	25	Switzerland	1
France	13	Rumania	1
Sweden	9	Italy	1
Denmark	6	Africa	1
Japan	4	New Zealand	1
Austria	3	Mexico	1
Spain	3	Norway	1
China	2		

A resume of the American labels shows the following trade-marks depicted on the miniatures (one of each kind existent, except where noted):

Acorn
Buffalo
Brooklyn Bridge
Bear
Battleship
Briquette (2)
Beehive
Bull
Blossom (Magnolia)
Blossom (Cotton)
Ball (Black)
Badger
Banner
Belt
Columbia
Centaur
Crescent
Cross
Corn (Ear)
Crow
Coat of Arms (3)
Cowboy
Crown
Diamond (3)
Dragon
Dog (2)
Devil's-slide
Eagle (4)
Elk
Eye (Human)
Eye (Hawk)
Eclipse
Fleur-de-lis
Fort (Alamo)
Flag (2)
Grasshopper
Gibraltar
Golden Gate
Hercules (3)
Hand (Right)
Horse
Horseshoe
Indian (8)
Isthmus
Key
Keystone (3)
Kiln (Rotary)
Letter or monogram (21)
Lion (3)
Landscape
Limestone
Lily
Leaf (Maple)
Leaf (Clover)
Mountain (2)
Mule
Mission
Medusa
Niagara Falls
Owl
Pyramid (4)
Parthenon
Pilgrim
Peninsula
Persons (4):
- William Penn
- H. Clinton
- George Washington
- Hendrick Hudson

Red Rose
Red Ring
Star (8)
Sphinx (2)
Swastika
Soldier
Shield (7)
Sunflower
Seal
Sunset
Triangle (2)
Turkey
Tiger
Trowel
Uncle Sam
Volcano

Of the 258 American labels, about one hundred have no design, most of the companies being content with the simple arrangement of the trade name occupying the center, or prominent portion of the labels. Such labels, nevertheless, also create a pleasing impression, regardless of the fact that a design is missing.

It will be impossible for Concrete to reproduce all of the miniature labels submitted to them, due to the fact that it is impracticable in many cases on account of the colors not fitting in with the scheme, and, therefore, not making a good photographic copy. It is hoped, however, that as many labels as possible will be reproduced in this and later issues of Concrete. Your attention is invited to the brands shown herein, and it is hoped that you will look forward to each successive issue of this publication with much anticipation, believing that we will be able to present to you labels and trade-marks which will provoke your interest and take you back many years, to the time when labels were few and far between.

On the preceding pages are reproduced fifty miniature labels. The ones here shown are best adapted for this group on account of the color scheme and with the thought in mind of showing in the first installment as many of the active companies as possible. We have here represented cement companies of 24 States of the Union.

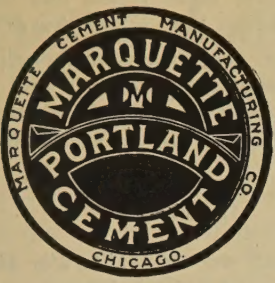
What a world of meaning, development and progress is spread before us as we gaze upon these pages and behold these silent sentinels of the portland cement world! What memories are born anew as we fondly scan the list and note, here and there, the "alma maters" of our "first love," and then, perhaps, making haste to locate the next ones where we were promoted to higher positions and responsibilities.

I am sure that many of us can claim close kinship, at one time or another, with at least several of the mills here represented. A few of my readers can also, without a doubt, trace their progress in the cement business from coast to coast, by the aid of these labels. The old slogan, "Go West," has been heard and heeded by many a cement man of the East, and there is scarcely a mill in the country today that has not felt the influence of the Easterner in some manner or other. Happy is he, then, who can say that, as he "served his time" in various mills, he has been a benefit to the industry and has helped in his small way to make the business what it is.

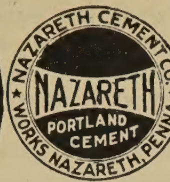
It will be impossible, of course, to make mention of each label shown. A few remarks pertinent to some of them are in order at this time.

It is to be noted that Nos. 2, 12, 14, 18, 27, 30 and 31 can be classed as some of the very best brands existent. It is believed that the "Giant" is the oldest one shown.

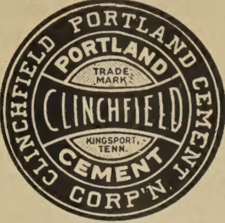
The "Lehigh," of course, leads the field with respect to total output of its various mills.



26.


NAZARETH CEMENT CO.
NAZARETH
PORTLAND CEMENT
WORKS NAZARETH, PENNA.

27.



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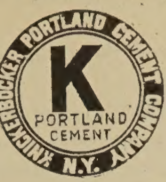

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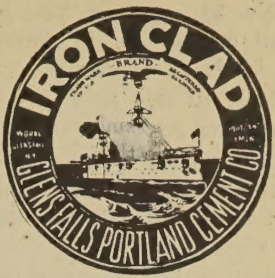
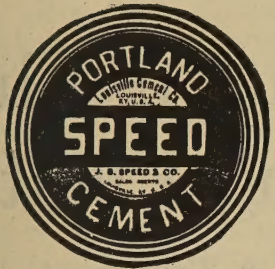
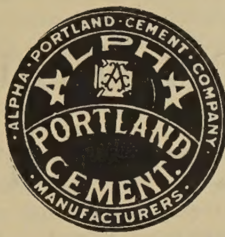

IRON CLAD
BRAND
GLENS FALLS PORTLAND CEMENT CO.

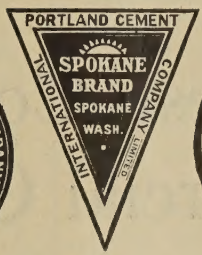
30.


PORTLAND
Louisville Cement Co.
LOUISVILLE, KY. U.S.A.
SPEED
J. B. SPEED & CO.
CEMENT

31.



32.



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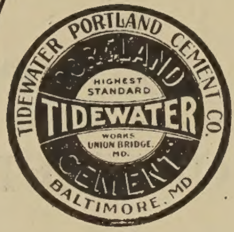

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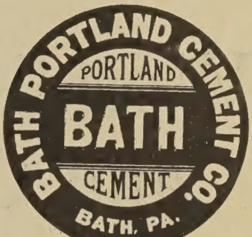

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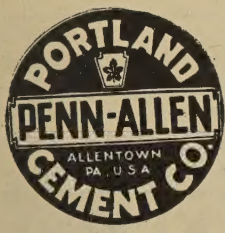
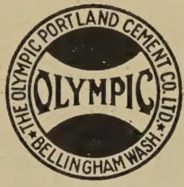
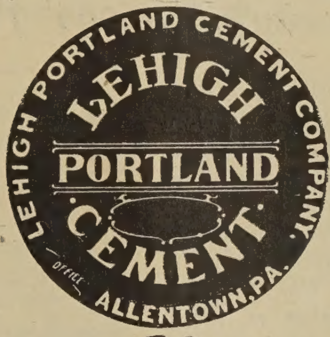

PORTLAND
PENN-ALLEN
ALLENTOWN PA. U.S.A.
CEMENT CO.

36.


THE OLYMPIC PORTLAND CEMENT CO. LTD.
OLYMPIC
BELLINGHAM WASH.

37.



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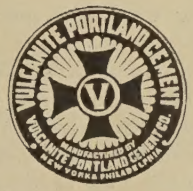
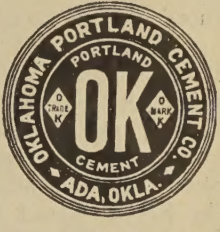

VULCANITE PORTLAND CEMENT
V
MANUFACTURED BY VULCANITE PORTLAND CEMENT CO.
NEW YORK PHILADELPHIA

39.



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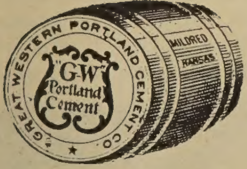

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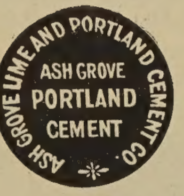
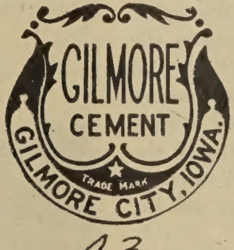

ASH GROVE LIME AND PORTLAND CEMENT CO.
ASH GROVE
PORTLAND
CEMENT

42.



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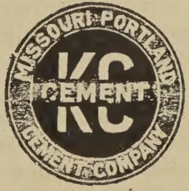

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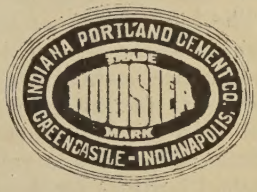

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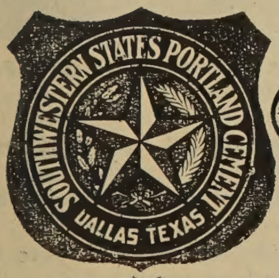

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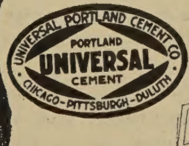

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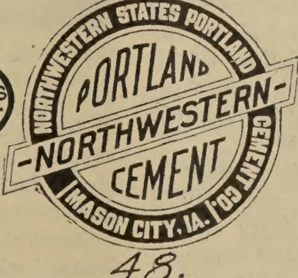

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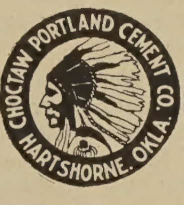
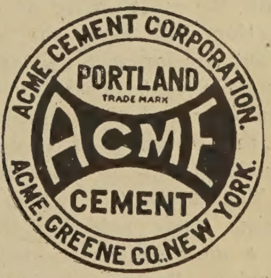

CHOCTAW PORTLAND CEMENT CO.
HARTSHORNE, OKLA.

49.



50.

American Cement Labels

No. 12 is the only one of its kind and is very appropriate.

No. 21, showing "Old Nick" himself, is possibly the most curious one in the entire collection, and receives all kinds of comments.

Nos. 10 and 49 are two of the many that commemorate the American Indian.

Nos. 23 and 33 are a distinct departure from the accepted form, and are somewhat unique in appearance. No. 41 is also something out of the ordinary, but shows up very well.

Scattered throughout the group are some comparatively new faces in the cement label world, the designs being very well worked out.

Taking the fifty brands as a whole, they make a very creditable showing, and there is not one that has not something in its make-up that is worthy of note.

We shall now leave you with your thoughts ruminating on these labels, and trust that this first installment has whetted your appetite sufficiently so that you will enjoy what is in store for you in succeeding issues of CONCRETE.

L'ENVOI

Scattered like chaff are the Mills o'er the land,
But here in my hand I behold them so grand!

World's Largest Combination Flux and Commercial Crushing Plant

Double Unit Plant of the Kelley Island Lime & Transport Co. to Have Capacity of 10,000 Tons in Eight Hours

Thoroughly in keeping with their position as a leading producer of rock products, is the latest development of the Kelley Island Lime & Transport Co. at its Marblehead, Ohio, quarry, where a new crushing plant has been practically completed, which, both in size and in excellence of arrangement and construction, marks a notable achievement in the rock products industry.

The Kelley Island Lime & Transport Co. has operated the Marblehead quarry for a number of years, the principal output being flux stone and kiln stone for lime manufacture. In addition to these main products, agricultural limestone and commercial grades of crushed stone are also being produced.

The high quality of the rock and the very favorable position of the deposit, located as it is, adjacent to the leading steel-making and industrial center of Ohio, and possessing facilities for both rail and water shipment, have been important factors in the building up of a huge volume of business, a volume which has outstripped the original facilities for production and rendered it imperative that the capacity and all-around efficiency of the operation be raised to the highest standard.

Quarry operators and engineers who are familiar with the multiplicity of questions that arise in connection with even the simplest quarry and crushing plant development will appreciate the magnitude of the problem that faced the officials of the Kelley Island company and the engineers who cooperated with them in the designing of a combination flux and commercial crushing plant of 1,250 tons hourly capacity.

The description which follows of the new plant is *prima facie* evidence that the problem was solved in a most impressive and withal a beautifully simple fashion. Problems incident to the selection and arrangement of the plant equipment, building construction, plant location, etc., were approached in a thoroughly painstaking manner, and the company officials spent considerable time in visiting several of the large operations in different sections of the country for the purpose of inspecting the various types of equipment in service at these quarries, and arriving at a fair and unprejudiced decision as to the best machines for their own requirements.

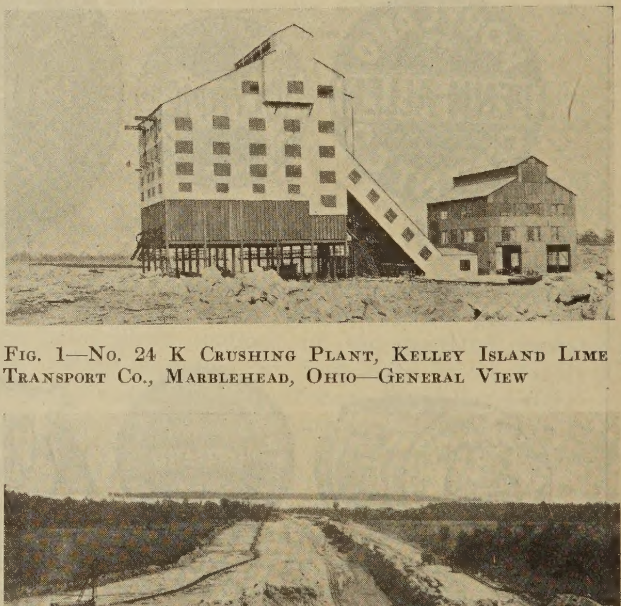


FIG. 1—NO. 24 K CRUSHING PLANT, KELLEY ISLAND LIME & TRANSPORT CO., MARBLEHEAD, OHIO—GENERAL VIEW

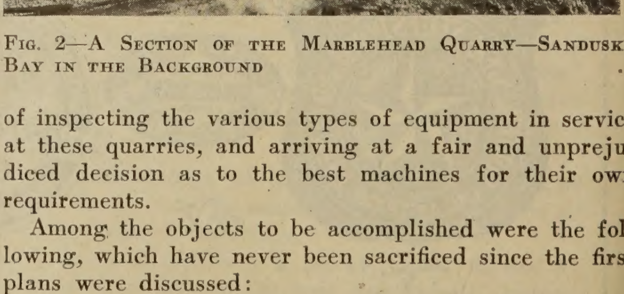


FIG. 2—A SECTION OF THE MARBLEHEAD QUARRY—SANDUSKY BAY IN THE BACKGROUND

Among the objects to be accomplished were the following, which have never been sacrificed since the first plans were discussed:

1. Safety of workmen employed.
2. Production of stone in large tonnage of merchantable products, meeting the most exacting requirements of the consumer.

Cement Labels I Have Met—Part 2

By Charles W. Erdell

Bethlehem, Pa.

> This is the second installment of Mr. Erdell's article on cement labels. The February issue of this magazine contained illustrations representing 50 American cement labels selected because their colors were easily photographed. Labels of other American cement companies will be reproduced in succeeding issues of Concrete before the foreign labels are illustrated. It will be impracticable to reproduce all the labels in black and white owing to the combinations of original colors.
>
> A printer's error crept into Mr. Erdell's article in the February issue, near the bottom of the second column on page [18], and a sentence which read, "It is to be noted that Nos. 2, 12, 14, 18, 27, 30 and 31 can be classed as some of the very best brands existant," should have read "It is to be noted that Nos. 2, 12, 14, 18, 27, 30 and 31 can be classed as some of the very *first* brands existant".—Editors.

It is regretted that more could not have been said of the miniature cement labels reproduced in the February issue of Concrete. Due to the fact that space was necessarily limited on account of important features appearing in that issue, it was quite impossible to make comments on all of the first fifty brands, and it was felt that a few remarks concerning some of the labels, here and there, were all that was permissible. It was appreciated, nevertheless, that as all of the fifty labels shown were well known, they needed no introduction, and that the ones not commented upon were of such merit that they "spoke for themselves." It will be a pleasure, therefore, for us to dwell more fully in this article on the second group of reproduced miniatures, and it is hoped that suitable mention can be made of the majority, or all, of the labels appearing on the following pages.

As previously mentioned, it is the desire of the publishers to reproduce in the first few installments the labels of the companies that are in active operation, and then to follow up with the obsolete brands, and later with those of foreign countries. However, all this depends upon what success the engravers have with matching of the colors of the labels that are to be reproduced in each group, and it may possibly become necessary to fill in with labels that are obsolete, and to follow up in the next issue with those that are as yet on the market and others that are out of date. When it is considered that there are 258 or more American brands, of which over half represent active mills, it will be seen that there are a number of interesting brands remaining to appear before all the ones of this country have been shown, and it is believed that each succeeding group of reproductions will become more interesting and worth while. In this issue we are showing a number of obsolete brands, and in the following articles we shall let you gaze upon still more of the "old-timers" and "has-beens."

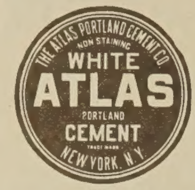
In our hurrying and speeding in the present age we are very prone to lose sight of and forget the old things, and we ever crave for something new and up-to-date. It must not be forgotten, however, that those *old* things were at one time *new* and at that period stood for what was best. The purpose of these articles is, therefore, twofold: first, to view the trade-marks that are new; and, secondly, to gaze with much interest and fond recollection on the ones that have seen their day and have served their purpose so well. As we draw back the curtain from all of these old trade-marks, what memories spring up and what scenes pass before us as we remember what these forgotten names once stood for! The majority of them are gone beyond recall. Some of them deserved a better fate, while most of them are justly unlamented. The latter is especially true of those brands which represented cement that was "portland" in name only. Nearly all of the "natural" (hydraulic) cement brands are obsolete by now, there being only a few of these mills in operation at the present time. This is also true of the "improved" brands, of which there were so many in the old days.

"Natural" and "Improved" Brands

For the uninitiated it might be well for us to digress and enlighten them on these "natural" and "improved" brands. This should be done in order that the reader may receive full worth and that publication of the miniature cement labels as a whole may be of the greatest benefit to all.

As is so well known, the fact that there was a natural cement industry made possible a portland cement industry. The mills of the early period manufactured both hydraulic (natural) and portland cement. It may be possible that some large units of a few of the larger corporations devoted their operations exclusively to the manufacture of hydraulic cement or portland cement. But it is true, nevertheless, that these two products often came into close communion with each other, and to prove this I will endeavor to explain. A typical mill of those days was laid out with so many kilns for the calcination of cement stone to be manufactured into hydraulic cement, and so many kilns for the production of clinker for the manufacture of portland cement.

This layout was, of course, contingent upon several important features, such as grade of stone quarried, output of each grade of cement desired, market, etc. The stock house bins were arranged so that they could accommodate either of the two products, and it should be pointed out that the conveyors that handled the finished product from the grinding mills to the stock house bins were used, at different intervals, for the handling of both grades of cement. On account of this latter fact much trouble was occasioned as sometimes the man in charge of grinding would send portland into the hydraulic bins, and vice versa. You cement men of the present day can well appreciate what it would mean to you now to be compelled to make use of one conveyor with which to transmit two dissimilar grades of cement to the same stock house, though, of course, at various periods.



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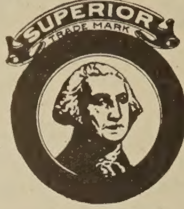

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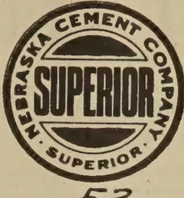

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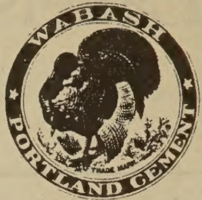

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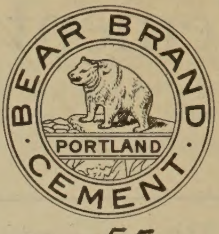

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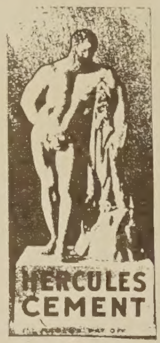

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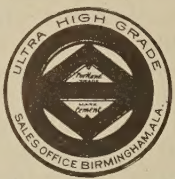

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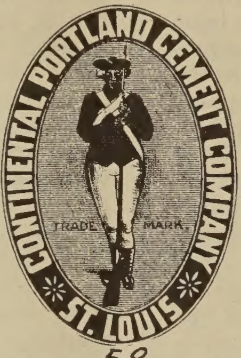

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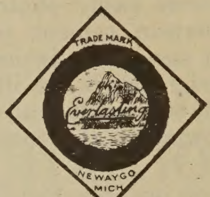

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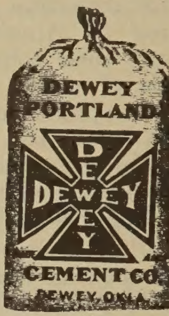

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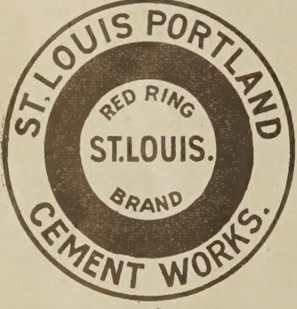

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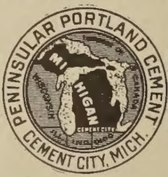

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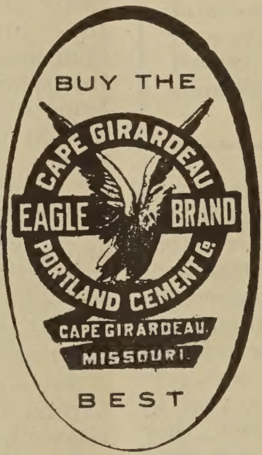

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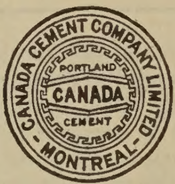

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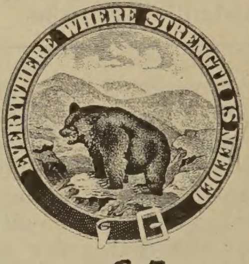
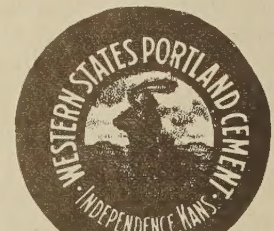
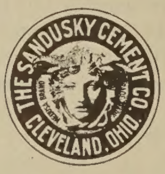

EVERYWHERE WHERE STRENGTH IS NEEDED

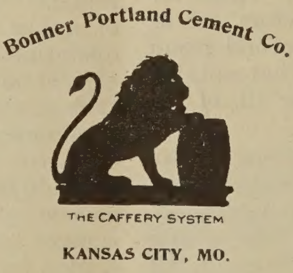
65.



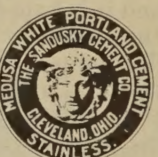
66.


THE SANDUSKY CEMENT CO.
CLEVELAND, OHIO.

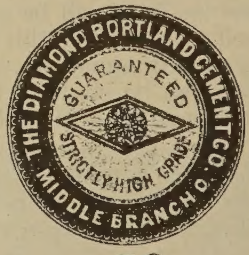
67.


Bonner Portland Cement Co.
THE CAFFERY SYSTEM
KANSAS CITY, MO.

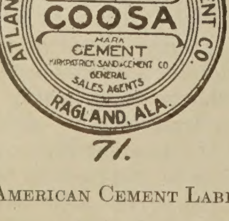
68.



69.


THE DIAMOND PORTLAND CEMENT CO.
GUARANTEED
STRICTLY HIGH GRADE
MIDDLE BRANCH, O.

70.



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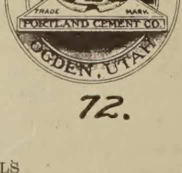

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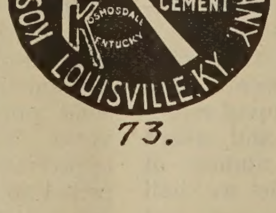

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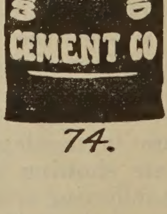

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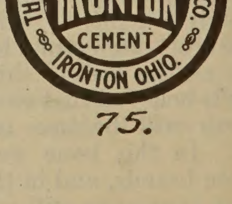


75.

AMERICAN CEMENT LABELS

The natural cement had various trade names, the most common being "Hydraulic," "Rosendale" and "Roman." Therefore, when the natural cement industry was in its infancy there was one, and only one, grade of that kind of cement. With the advent of the manufacture of portland cement, a great change took place. Experiments were made and it was discovered that by combining the two grades of cement, various other grades could be manufactured, and this was done in the following manner:

To each ten barrows of calcined natural stone was added a barrow or two of portland clinker, and after this mixture was ground the resultant product was much more desirable than the ordinary hydraulic cement, because the addition of the portland clinker had its effect upon the nasty muddy-yellowish color of the natural cement and gave it a darker hue. It also added perceptibly to the tensile strength of the cement. This product was, therefore, called "Improved Rosendale," "Improved Hydraulic," etc. By this method, you will see that the quality of the natural or hydraulic cement was improved and a better price was secured for it.

Now this method was reversed, and I will show you how the portland cement was cheapened. For various reasons it was deemed good business by some of the cement manufacturers to produce a so-called portland cement that was somewhat inferior to and cheaper than the genuine article. This was done by the addition of so many barrows of calcined natural stone to so many barrows of portland clinker, the mixture depending upon the quality of cement it was desired to turn out. The thing was figured down so nicely that the tensile strength of the resultant product could be regulated to within the limits of 25 or 30 lbs. This grade of "portland" cement was, naturally, much cheaper to produce, but it never could take the place and fill the requirements of the genuine grade. The effect of the addition of the calcined stone was reflected in the color of the cement, rendering it much lighter. It also reduced the tensile strength, which was regulated at will.

We may say then that we had, in those old days, four distinct grades of cement manufactured in the same mill, and the consumer was usually guided in his selection by the prices quoted him, unless he knew just what he wanted, in which case he specified his favorite brand. In those days the word "improved' stood for "something better", and the time was when it was impossible to keep up with the orders for the improved brands, causing the lower grade to become a drug on the market.

From the foregoing will be seen the reason for so many different brands appearing on the market in the 90's, and it was only when portland cement was manufactured so cheaply in the rotary kilns that hydraulic cement, produced in conjunction with portland cement in the same mill, received its deathblow. It was better thus as so many spurious brands were foisted upon the consumers, and they became suspicious of any mill wherein anything but portland was turned out. It will be admitted that their suspicious attitude was not always without cause. The fault was not so much with the mills themselves as it was with the unscrupulous dealers, especially those located in the larger cities and in localities where nothing was known about cement except to buy it and use it, trusting to luck that the job would hold up.

Referring to the labels herein shown:

Note that No. 51 represents the famous "Atlas", whose output of portland cement is greater than any of the other larger companies.

No. 52 is one of the four brands embodying the likenesses of illustrious persons. The "Washington" trade-mark is one of the very few that requires no descriptive matter on the main portion of the label to inform us of the brand name. Truly, this is a case of "he who runs may read". It is, indeed, a far cry from the days of the immortal Washington to the present great era of *portland cement.*

No. 53, showing the Nebraska company's "Superior" brand, is arranged on the order of many American designs, and shows up well.

The proud "gobbler" depicted on the "Wabash" label, No. 54, is emblematic of the Hoosier State. This is an old and familiar trade-mark in the cement world.

Nos. 55 and 65 are two designs of the Golden State Portland Cement Co., of Los Angeles. Presumably No. 65 is a "sticker" label, and in such event is would have been better to have some identifying marks on the trade-mark. However, these two brands are very good in matter of get-up.

No. 56 speaks of the strength of all good portland cement. This demigod has been in demand on various occasions as the trade-mark for cement companies at home and abroad. There would be something missing if we did not have our "Hercules".

The Standard organization deviated from the accepted form and, all in one breath, as it were, they tell us of the four highest qualities,—*strength, uniformity, durability* and *fineness,* in No. 57.

No. 58 exploits the Continental Soldier, who secured for us our liberty. It must be admitted that this label, in its original colors, is strikingly pretty.

"Everlasting", in flaming letters, is written across the face of the famous Gibraltar shown on the "Newaygo" miniature. What more could be desired than this?

No. 60, "Dewey", so far as is known, is the only one arranged in this attractive manner and shows up very well.

The St. Louis Company has been "showing us" the famous "Red Ring" for so many years that it has become part and parcel of the industry.

No. 62 shows the "Peninsular" design, which is a booster for the home state as well as for the company's product. This is the only design of its kind.

Missouri comes forward again, and this time it is "Cape Girardeau" telling the world that our Eagle stands for "the best". Some of the foreign manufacturers, especially the Belgian, make great use of this bird for trade-mark purposes. (These labels will appear in due time).

The Canadian label, next in line, represents fifteen mills of affiliated companies operating throughout the Provinces.

We were certain that some day the Cowboy would be remembered by the trade. In this case, No. 66, does he stand for "hardness"? Or would it probably be "durability"?

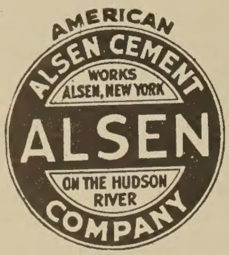
One of the Gorgon sisters adorns the labels of the Sandusky brands shown here, and represents a well-known brand.

No. 68 denotes the quality of the "Caffery System's" product, and is somewhat on the order of several foreign brands.

No. 70 is the only brand known to represent a precious stone. As pure and as high grade as a "Diamond" should be sufficient guarantee.

No. 71 is obsolete and has been succeeded by the "National" which was shown in February issue, the name "Coosa" having been retained for the trade-mark.

To be "as busy as bees" is the desire of all cement men. "Ogden", let's go!



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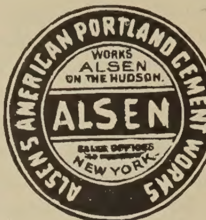

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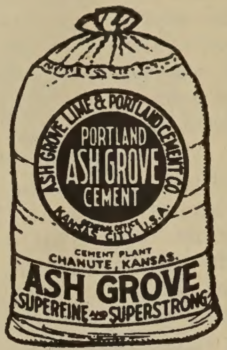

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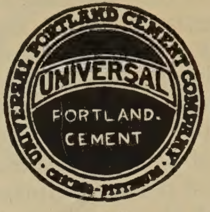

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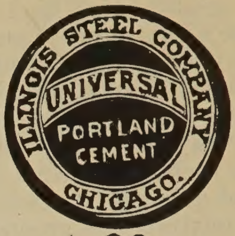

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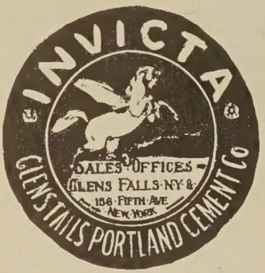

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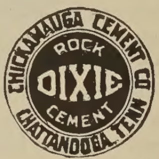

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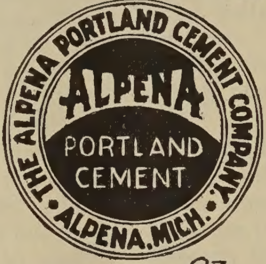

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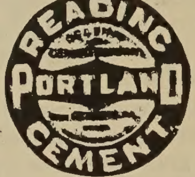

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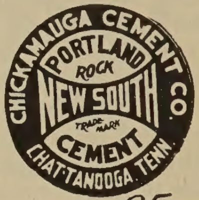

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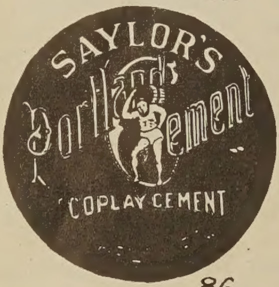

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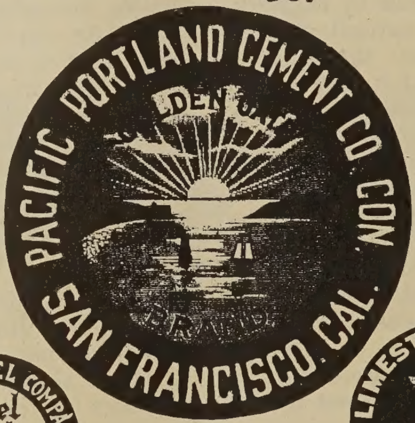
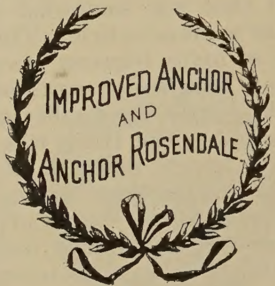

PACIFIC PORTLAND CEMENT CO. CON.
SAN FRANCISCO, CAL.
BRAND

87.



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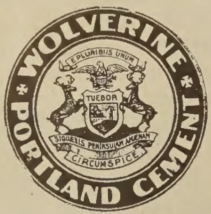

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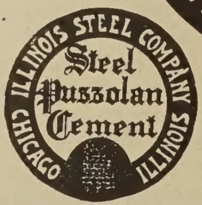

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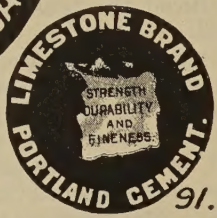

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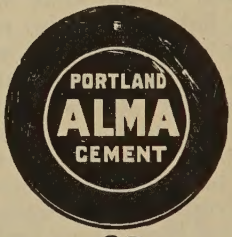

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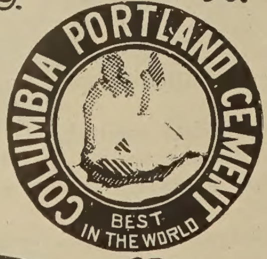

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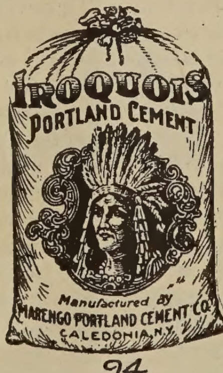

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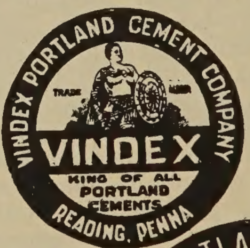

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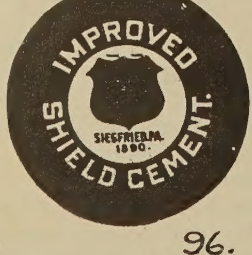
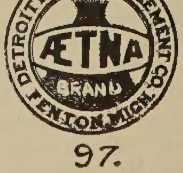
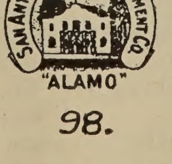

IMPROVED
SIEGFRIED PA.
1890.
SHIELD CEMENT.

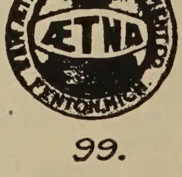
96.


DETROIT PORTLAND CEMENT CO.
ÆTNA
BRAND
FENTON, MICH.

97.


SAN ANTONIO PORTLAND CEMENT CO.
"ALAMO"

98.


ÆTNA PORTLAND CEMENT CO.
ÆTNA
FENTON, MICH.

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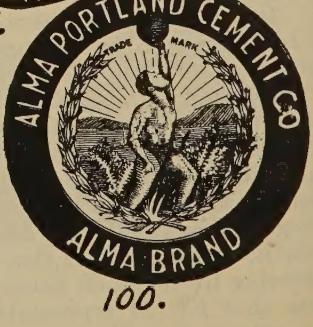

100.

AMERICAN CEMENT LABELS

It is quite possible that No. 73, "Kosmos", was taken from the Greek *Cosmos*, signifying *world* or *universe*.

Here we have another 94 lbs., securely wrapped in Colorado's fresh air and sunshine!

No. 75 shows the "Ironton" in a new dress, the well-known "Limestone" brand, which is shown as No. 91, having been discarded.

Nos. 76 and 77 represent what remains of all that was once a goodly concern.

The "Ash Grove" also contributes a bag to the collection and draws attention to its "super" brand.

No. 79 shows the "Universal", which is one of the very large producers. No. 80 shows the old Illinois Steel Co. brand, which gave way to the one just mentioned. Referring to No. 90, we behold one of the few puzzolan trade-marks that existed in the old days. This brand is obsolete.

The "Invicta," No. 81, is an obsolete brand, having been discontinued many years ago. If memory serves me correctly, this was a portland brand.

No. 82 is also an obsolete brand, and was, no doubt, succeeded by the present Dixie company, whose "Royal" brand was shown last month. No. 85 also belonged to the old company.

The "Alpena" brand, No. 83, is out of date, having been taken over by the Huron company whose brand was shown previously.

No. 84 is the obsolete "Reading" brand, which was succeeded by the "Vindex", No. 95, that passed on and gave up the ghost. The Allentown company, "Swastika" brand, is now located on the site.

No. 86, the old, old "Saylor's" brand, together with the "Giant" and "Atlas", constituted the triumvirate in the early days. No. 88 reminds us of two brands that were manufactured by the Coplay company, but have been off the market for about twenty years. These were hydraulic cements, which have been discussed at some length in preceding paragraphs. How emblematic the design, the brands now being wreathed in obscurity.

California beckons as we gaze upon the "Golden Gate".

Michigan again comes to the fore and here we have the "Wolverine". This company also had an "Eclipse" brand, which will probably appear shortly on these pages.

No. 92 shows the "Alma" brand, which superseded the original design as shown by No. 100.

No. 93 is an obsolete brand of the old American Cement Co., Egypt, Pa., now the Giant company. Another of their brands was the "Egypt" portland, the label of which has not yet been reproduced. Both the "Columbia" and "Egypt" trade-marks, like the Arab, have "silently faded away", and are only a memory to a few.

To No. 96 befell the same fate that overtook those hydraulic cements that were produced in the same mill with portland. This company's "Dragon" appeared in February.

No. 94 is the obsolete "Marengo" brand, which was the successor to the old Iroquois company.

No. 97 shows the old Detroit company's label, and No. 99 the new trade-mark of the reorganized company.

Who does not think of Davy Crockett and experience a thrill as we gaze upon the picture of the Alamo? Would it not be well if more of American history were memorialized in this manner?

Columbia Cement Co. Organized

The Columbia Cement Co. capitalized at $2,000,000 has been incorporated at Carson City under the laws of Nevada and surveys of the property west of Huntington, Ore., are being made with a view to starting construction on one of the largest cement plants west of the Mississippi river. The company has local headquarters in the Concord building, Portland.

The company, according to an announcement, attributed to Aman Moore, Los Angeles, is a closed corporation and no stock will be sold. Half of the capitalization, it is estimated, will be required for taking care of the cost of acquiring the property on which the cement deposit is found and erecting the first unit of the mill. It is estimated that the plant will be completed and ready for operation by September 1. The wet process will be used and the initial plant will have a capacity of 1500 bbls. per day, according to present plans. The first kiln to be erected will be 10½ ft. x 240 ft.

The machinery formerly used in the old Washington Portland Cement plant at Concrete, Wash., has been purchased and will be installed in the new plant at Huntington. Other new machinery will be added to this as needed.

Natural Rock Deposits To Be Used By Columbia Co. Located Near Huntington, Ore.

The deposit of the cement rock to be worked by the new company is located on the line of the O.W. R. & N. railroad and is reported to contain all the elements necessary for the raw material for cement. The limestone ledges are in contact with an abundance of calcerous shale suitable for cement making.

The officers of the new concern mentioned are: Fred A. Ballin, president; J. L. Jennings, vice president and general manager; E. H. Collis, treasurer; Arthur Langguth, secretary and J. N. Webster, chief engineer.

Kelley Island Lime & Transport Co. Improves Gibsonburg Plant

By R. H. Black

Following the completion of its new hydrate finishing mill plant at Gibsonburg, Ohio, the Kelley Island Lime & Transport Co. has recently completed remodelling a battery of 10 kilns.

These kilns were originally installed some eight or nine years ago and were of the straight shaft type, with single arch or port hole between each fire box and the main shaft of the kiln.

The accompanying layout shows the general construction of the kiln plant, which is of fireproof steel and concrete design and this part of the plant was not damaged by the fire which destroyed the hydrate plant in 1920. The layout also shows the stone charging track on top of the kilns, which is on a slope of 1/4 in. per foot. The hoist house being at the far end of the kilns from the quarry, thus the cars run back over the kilns

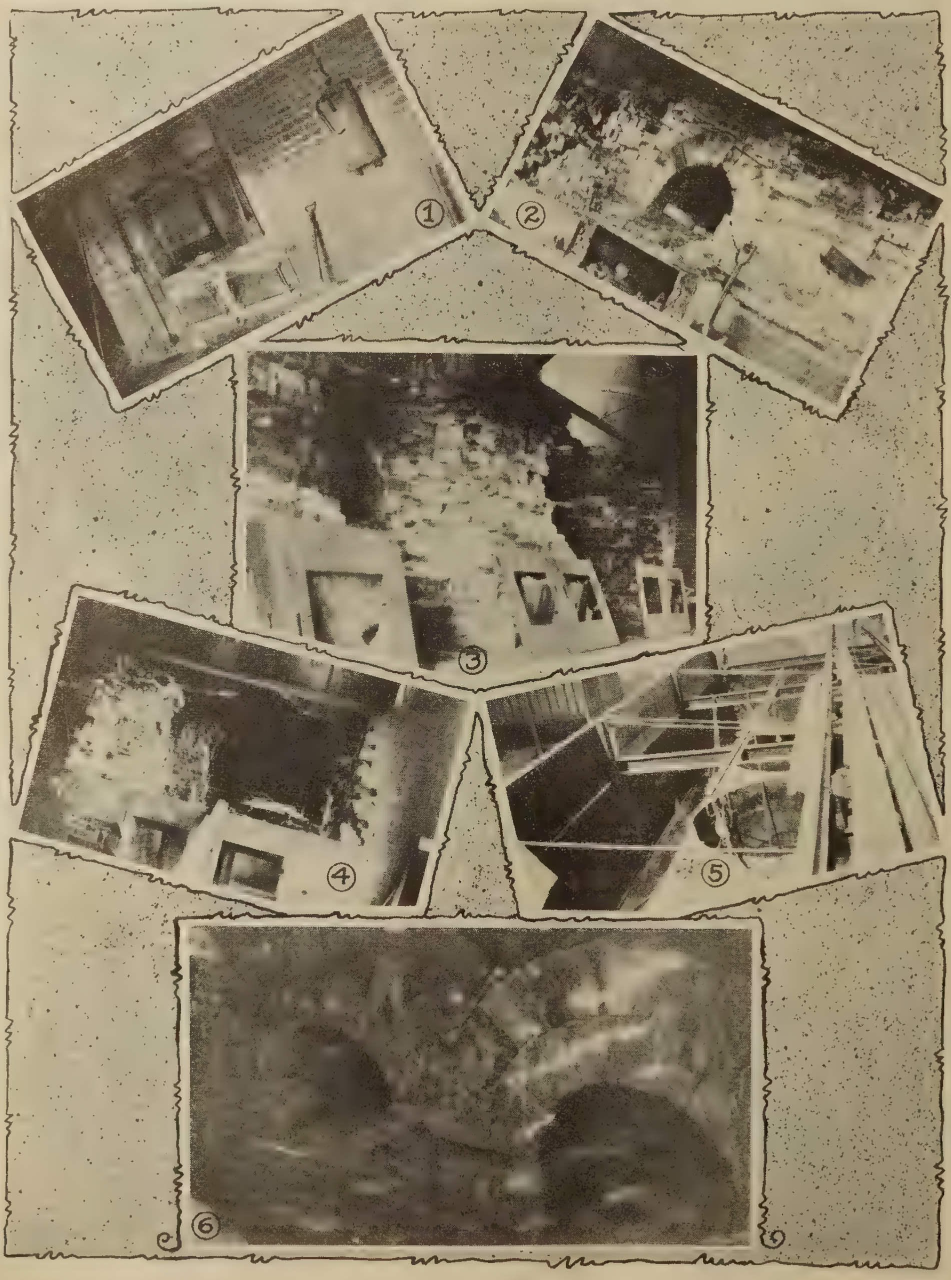

Fig. 1—Old Fire Box Construction, Showing Counter Balanced Fire Door, Single Fire Opening

Fig. 2—Old Fire Box Showing Port Hole, Tearing Out Brick Work, Castings Removed

Fig. 3 — Old Brick Lining and Fire Boxes Torn Out — Note Steel Shells Rest on Brick Work Not Touched

Fig. 4 — Note Small Amount of Brick Work Torn Out to Accommodate the Arnold Fire Boxes and Lining — Setting the Ash Frames

Fig. 5 — Extending Steel Cribbing for Additional Storage

Fig. 6—Double Port Holes Entering Main Shaft of Arnold Kiln — Note the Special Arch Blocks

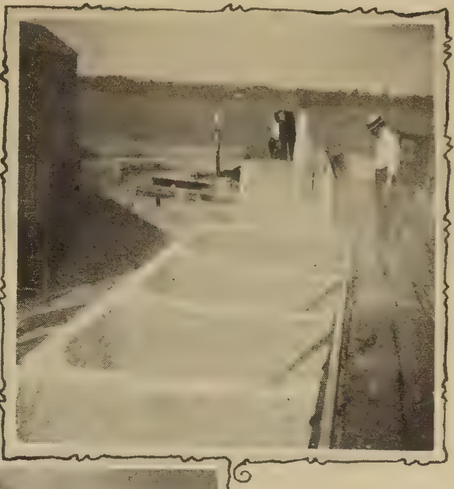

FIG. 8—PORTION OF THE TEN KILNS REMODELED—VIEW TAKEN ON TOP OF KILNS, LOOKING DOWN INTO THE CRIBBING—STEEL CRIBBING IS ENTIRELY PROTECTED FROM THE GASES BY PAVING BRICK LINING

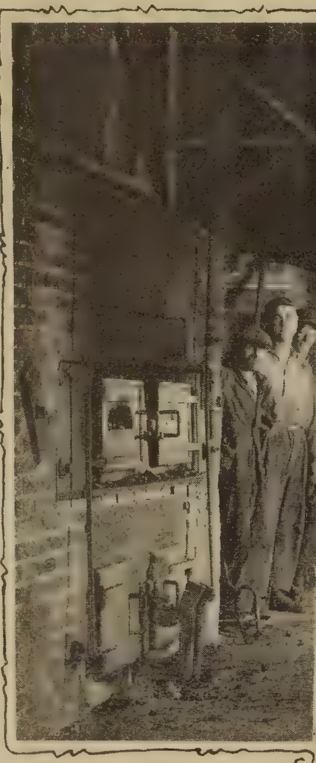

FIG. 9—PORTION OF THE TEN KILNS REMODELED WITH ARNOLD FEATURES—NOTE THE DOUBLE SWINGING TYPE FIRE AND ASH DOORS AND McGINTY SHAKING GRATES

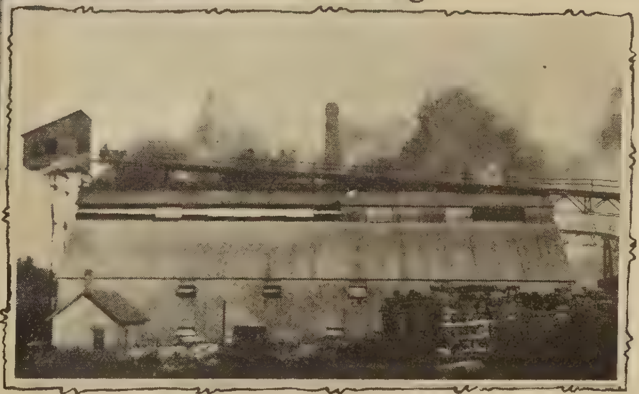

FIG. 10—EXTERIOR VIEW OF THE PLANT, OPERATED BY THE KELLEY ISLAND LIME & TRANSPORT CO., GIBSONBURG, OHIO. AFTER THE KILNS WERE REMODELED

by gravity after discharging the stone. The cars are side dumping style of two yards capacity. The hoist is a duplex steam driven type.

Since there was ample height between the top of the kilns and the track over the kilns, it was decided to increase the stone storage capacity by adding an additional section of steel to the present cribbing. The accompanying illustrations show this construction, both before and after the brick lining was run up. The brick lining protects the steel from the injurious effects of the kiln gases. As will be seen from the illustrations, the hoppers forming the stone storage over the top of the kilns, are hexagonal in shape and are "self-cleaning," which was accomplished by placing triangular steel plates, on a suitable slope, at each corner, forming a backing against which the brick lining was placed. One of the advantages of this construction was that it served to reduce the weight of the supporting structure due to the air space back of each corner plate instead of solid brick masonry.

From results obtained at its White Rock and Marblehead plants, where a number of kilns of similar size were remodeled and Arnold linings[1] installed, this company decided to install the same style linings here. As was anticipated, an increased tonnage has resulted, which tends to help balance up this part of the plant with improvements that have already been made in other departments.

An interesting feature in making the alterations to these kilns, was that the kilns were rebuilt in groups, i. e. while a group of three or four kilns were being rebuilt, the balance of the battery was kept in production. The urgent demand for the kilns at this plant made this method of carrying on reconstruction work of considerable practical value.

Referring to the general layout, it will be noted the kiln plant consists of three kilns at each end and four in the center of the battery. Two passageways connect the firing floors on opposite sides of the building. The steel shells are 10 in. in diameter and about 20 ft. high. New brick fronts which support the shells were installed. These are similar to the old ones but are equipped with new cast iron ash and firing doors and McGinty shaking grates. In the old kilns, ordinary bar grates were used. Steam is used under the grates, the piping for same being shown in one of the views.

This is one of the plants where the well-known "Tiger Lime" is produced and it is to meet the con-

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[1] Arnold & Weigel, Woodville, Ohio.

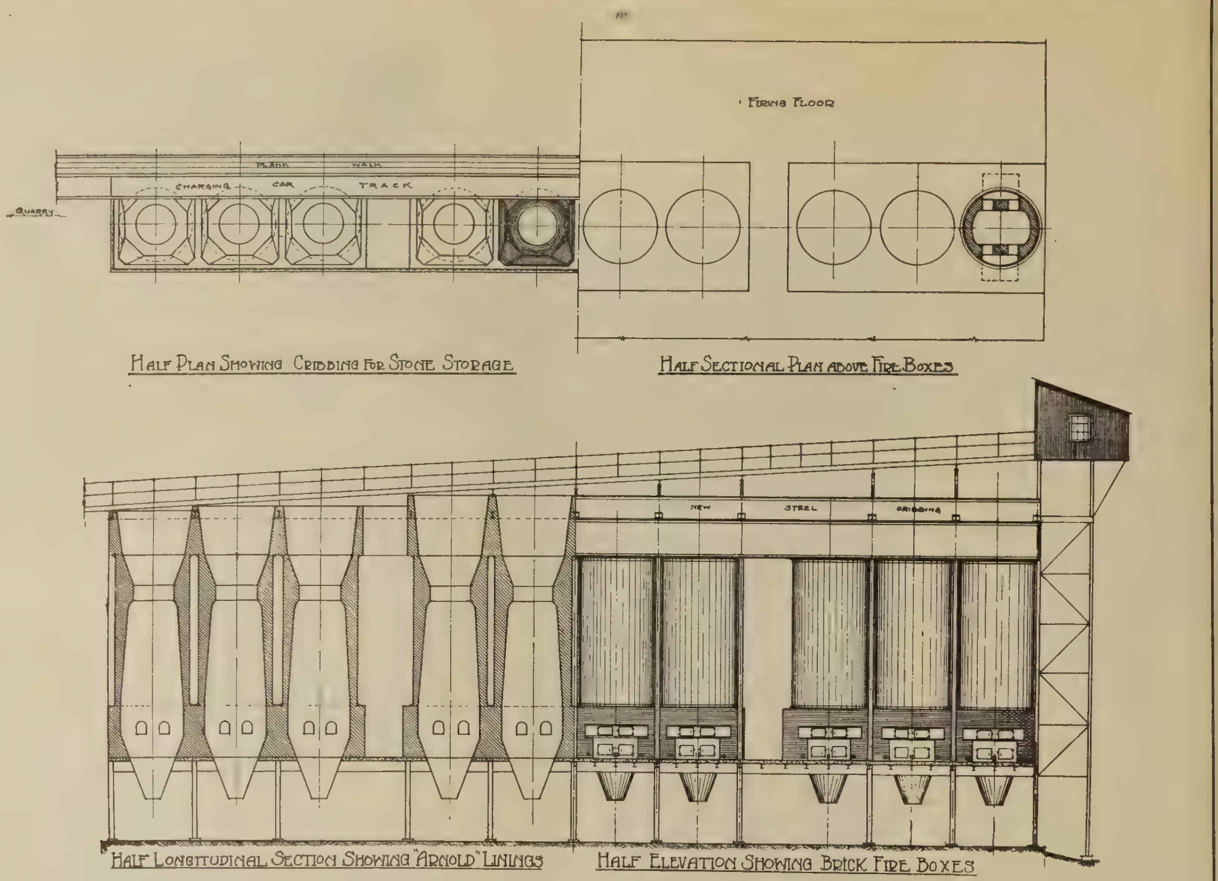

Firing Floor
Plank Walk
Charging Car Track
Quarry
New Steel Cribbing
Half Plan Showing Cribbing for Stone Storage
Half Sectional Plan above Fire Boxes
Half Longitudinal Section Showing "Arnold" Linings
Half Elevation Showing Brick Fire Boxes

Fig. 7—Plan, Elevation and Sections, Showing Ten Kilns with Arnold Linings

stantly increasing demand for this high grade lime that these improvements have been found necessary.

The entire time consumed in making these improvements was about ten weeks.

Arnold & Weigel, contractors and engineers, Woodville, Ohio, were the general contractors for this work.

Portland Cement Industry of France

The French cement industry appears to have taken on a somewhat brighter aspect. Cement factories in the Boulogne district report improved demand, and in consequence the plants are working full time in anticipation of continued orders from England and Ireland. The reflection of the exchange situation in the price of coal has caused an increase in cement prices of 8 francs per ton. Latest quotations are 118 francs per metric ton, plus 40 francs for sacks.

Important movements of cement are contributing to the general activity of the port. Large shipments have recently been made, and other loadings of considerable tonnage are under way for the west coast of Africa. Total shipments from Boulogne by water during October amounted to 9,986 tons.

TRADE WITH BRITISH ISLES—COMPANY EXPANSION IN FRANCE

Actual exports of cement from Boulogne to Great Britain have begun, cargoes of 1,164, 373, and 300 tons having already gone to Newcastle and Dublin, where the quality of French cements is recognized and highly appreciated. The Michael Murphy Steamship Co. is contemplating the establishment of a regular line between Boulogne and Dublin, to care for the cement traffic. The prospect of an extension of the cement trade between French producers and British consumers is a matter of much importance and satisfaction to the Boulogne industry.

Building industries in southwestern France have of late taken on such an impetus that the Societe des Chaux et Ciments du Languedoc has started its second furnace and plans to start a third one at once. The daily production of cement will shortly exceed 2,500 sacks. The Societe des Produits Industriels de Paris (capital 1,000,000 francs) has taken over the Societe des Ciments Portland francais de Bettrechies-lez-Bavay. The capital of the Societe des Ciments et Chaux d'Angouleme-sur-Mer has been increased from 1,000,000 francs to 1,500,000 francs. A company capitalized at 240,000 francs has been organized at Rheims to exploit the Polla and Cornaz patents for cement manufacturing processes. —*Commerce Reports.*

Many aliens employed in the cement mills are acquiring property in Coplay, Pa. Dozens of names of men of foreign birth are on the lists of property owners, whereas ten years ago there were scarcely any, and half a dozen property owners owned half of the houses in Coplay. These owners have disposed of their holdings, with the result that Coplay houses are usually owned by their occupants.

Quite a number of aliens, who left Coplay, Pa., during the period of business depression, returned late in the year. With the mills working on a capacity basis, an abundance of employment was available to the newcomers.

Cement Great Factor in Asia's Progress[1]

BY PAUL C. VAN ZANDT
CHIEF ENGINEER, ASANO PORTLAND CEMENT CO.

The increasing use of portland cement is solving many important problems of long standing. The manufacture and use of cement in the Orient, where it comes into competition with the crudest materials of construction and cheapest labor and most limited buying power in the world, is interesting in the extreme.

At the present time, when the industry of the world has slowed down and factories and ships are idle in Japan as they are elsewhere, the cement business almost alone is extremely active, with a great demand exceeding the production.

The countries bordering the Pacific Ocean present the greatest contrasts in civilization known to the world, and the difference is reflected in the use of cement as well as nearly all other commodities that have grown from luxuries to necessities in European and American civilization in the past two hundred years.

The United States, with 110,000,000 people, uses over 100,000,000 bbls. of cement annually, or nearly one barrel of cement per inhabitant per year. This per capita consumption is found in Canada and New Zealand as well. Australia, with its vast sparsely inhabited territory, consumes about one-half barrel per inhabitant, as shown by the illustration. Such European countries as England, France, and Germany use (or did before the war) about the same amount per capita, roughly speaking, as does Australia.

PER CAPITA CONSUMPTION OF CEMENT IN ORIENTAL COUNTRIES

Country	Population	Consumption	Per Capita
China	440,000,000	1,850,000 bbl.	.004 bbl. or 1.6 lbs.
Japanese Empire	77,000,000	9,000,000 bbl.	.117 bbl. or 44.4 lbs.
British India	315,000,000	1,600,000 bbl.	.005 bbl. or 1.9 lbs.
Dutch East Indies	37,000,000	650,000 bbl.	.017 bbl. or 6.7 lbs.

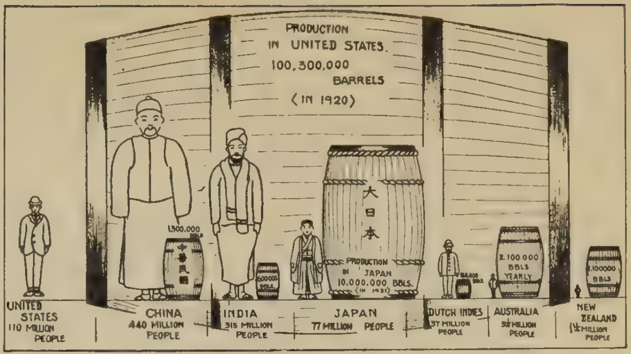
PER CAPITA CONSUMPTION OF CEMENT IN COUNTRIES OF GREATEST CONSUMPTION FOR COMPARISON

Country	Population	Consumption	Per Capita
United States	110,000,000	103,000,000 bbl.	.037 bbl. or 356 lbs.
Canada	8,770,000	8,000,000 bbl.	.92 bbl. or 347 lbs.
New Zealand	1,260,000	1,100,000 bbl.	.873 bbl. or 332 lbs.
Australia	5,000,000	2,100,000 bbl.	.42 bbl. or 160 lbs.

These tables show the enormous possibility for the use of cement in the Orient.

If these Oriental countries were to use as much as the United States, for example, China would use 222 times, Japan 8 times, India 187 times, and Java 53 times as much as at present.

With these figures for comparison, the remarkable industrial advance of Japan stands out clearly in comparison with the status of other Oriental nations. Japan proper uses about one-fifth barrel per inhabitant, or one-eighth when her populous but slightly developed possessions are included: namely, Korea and Formosa. In addition, Japan exports 10% of her production to other Oriental countries. The present Japanese rpoduction of more than 10,000,000 bbls. per year is more than that of all the rest of the Orient put together, and even a little more than is produced by Canada. From the time when cement was first produced in the Far East this has always been true, and the present rate of increase of Japanese production indicates an extended period of supremacy. The tables of prices and production illustrate clearly the advantage gained by Japan during the war, when foreign imports were cut off. It is questionable whether foreign companies can ever regain any large part of this market in the face of the efficient production in this country.



COMPARISON OF CEMENT PRODUCTION AND POPULATIONS OF VARIOUS COUNTRIES

The Asano Cement Co. is by many times the largest in the East and is the largest in the world outside of the United States. The best plant now built in the Orient is, in the writer's opinion, the Kawasaki factory of that company. There are several others that are very modern and well built in China as well as in Japan, and the description of the Kawasaki factory[2] may serve as being typical of the best in this part of the world. Several of the very small plants are crude, but their capacity is so small that they are not representative of the development of the industry.

Indian Cements

A LETTER FROM D. K. MEHTA

GWALIOR CEMENT CO.

It was with a feeling of surprise not unmixed with resentment that I could manage to finish reading the article[1] on "American Cement in India" contributed by Avra M. Murray, Consul, Karachi, India. If the article had been written before the year 1914 I would have kept silent, as there was nothing like Indian cement then in the market. But coming in as it does in the year 1922 it takes one by surprise and leaves him in doubt whether the writer was in his normal mood when he penned the article. Not only is the Indian cement in no way inferior to any foreign cement, but it can hold its own with the best cements either in the American or English market. Some of the Indian brands are far superior to many of the foreign ones, and quite equal to the best of them in the Indian market. The most competent of the constructional engineers—Indians and Europeans alike—will corroborate my statement if any corroboration were required. I have myself carried out the usual tests required by the British standard specification on some of the Indian and foreign brands, and I can testify that the Indian brands are in no way inferior to the best of foreign ones.

The writer places the cement into three categories—"at one end there is the high grade British cement, which encounters no competition," and at the other end

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[1] Abstracted from an article in *Trans-Pacific.*

[2] Cement Mill Edition of CONCRETE, April, 1922.

[3] Cement Mill Section of CONCRETE, September, 1922.

"there is the Indian cement declared by the constructional engineers to be an inferior variety of mud and used only in construction of a temporary character, where durability is sacrificed to cheapness in price—and in spite of its cheapness and the proximity of the supply enters in a very limited way into the general field of cement construction."

For the enlightenment of the learned author of the above, I may inform him how far the Indian cements enter into the general field of cement construction. Three factories started manufacturing cement on up-to-date lines in the year 1914, and it is these factories that, besides supplying Indian requirements, shipped cement to Africa and Mesopotamia during the war time. They have all duplicated their plants, and there are others which have either already started manufacturing operations or are about to start them with the end of the year 1922. Hence by the beginning of the year 1923 we shall have about nine factories working full speed, with an annual output of about 5,000 tons, which would satisfy the present requirements of India, leaving a small field for foreign brands.

The imports into India are shown below:*

	Pre-War 1913-14 Tons	1917-18 Tons	1918-19 Tons	1919-20 Tons	1920-21 Tons
U. S.	121,900	68,500	8,500	75,300	123,300
Japan	1,000	7,700	12,200	9,100	400
Hongkong	1,000	6,300	6,200	4,600	2,500
Italy	1,100	800	.....	.....	.....
Other countries	21,500	400	300	2,300	4,500
Totals	146,500	83,700	27,200	91,300	130,700

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*Figures taken from the Review of the Trade of India, 1920-21.

This is the foreign trade in cement, and it will at once be seen what scope there is for American cement in the Indian market. There may be many projects requiring the use of cement, but India will be able to supply its wants now that the cement manufacture has become so common here. Even the Government had to issue a circular recommending the use of Indian cement of standard quality in all the government projects, and hence there is no question now of India depending upon European and American markets for its supply of cement. If Indian demand for cement is more than the local supply, the plants will be duplicated and new ones will spring up. I am not against America trying to introduce its cement in the Indian market, but the way the writer has selected to do so provokes resentment. There is nothing wrong with the quality of Indian cement, which can be seen by its extended use by government and municipal institutions all over the country.

The superintendent of the Government Test House, Indian Munitions Board, writing as early as 1917, says: "The three factories dealt with in the report are all modern concerns and compare favorably with those of well known manufacturers at home. The results show that the cements as at present manufactured are equal to the best English brands. All these cements are sound, reliable and suitable for all classes of work. Imported cements are not infrequently found to have deteriorated during a voyage, and Indian cements offer advantages in this respect also. It is hoped that the publication of this report will serve to remove any prejudice against these brands of Indian cements which may remain in the public mind, and lead to an expansion of the industry."

I hope the publication of this article will convince Mr. Murray and the readers of your journal of the reliability of Indian cements.

Signal Mountain Plant Progressing

Construction of the new 5,000 bbl. wet process plant of the Signal Mountain Portland Cement Co., located in North Chattanooga, is progressing very satisfactorily, and it is anticipated that the first cement will be turned out during April or May of this year. The concrete work on the $3,000,000 project is almost complete, and work on the clinker burning and coal drying and grinding departments is being rushed.

In designing the plant, all of the natural advantages have been taken into consideration for the benefit of the cost of production. The compactness and simplicity of design are expected to require a minimum amount of labor. According to the design, the operation of the plant will be flexible, with liberal storage capacity between the different departments, so interruptions in one department will not interfere with the operation of another. The capacity of the plant can be increased 100% on the same ground space without interfering with operation, or changing the design and appearance of the buildings.

A minimum amount of elevating and conveying machinery will be necessary, as wherever possible advantage is taken of gravity. Approximately 130 men will be required to produce 5,000 bbls. of cement daily when the plant is complete.

Well drills and high-speed hammer drills will be used in quarrying the rock. Steam shovels with 3½-yd. buckets will be used for loading stone from the quarry to side dump cars having a capacity of 12 cu. yds. each, in which it will be transported to the stone crushing department. Initial crushing will be done in a No. 21 gyratory crusher, and the material will then pass through two Jumbo type hammer mills and thence into the raw material storage.

Clay will be loaded from the clay field by steam shovel into 12-yd. side-dump cars, and transported to the raw material storage on an elevated trestle and dumped. Coal will be handled in cars and dumped from the elevated trestle into the raw material storage. Gypsum, which can be secured from Arkansas and Virginia, will be shipped in cars and handled in the same manner as the coal.

Raw Material Storage

All the raw materials will be stored in one large storage, 80 ft. by 650 ft. This will include clinker storage. Considerable labor in connection with overhead electric traveling cranes will be saved by the dumping of the in-bound raw materials from the elevated concrete trestle. The storage building is designed to store in excess of 15,000 tons of crushed stone, 5,000 tons of clay, 5,000 tons of coal, 150,000 bbls. of clinker, and 2,500 tons of gypsum.

Operating Methods

The clay will be taken from storage, washed in a 26-ft. wash mill, ground with the stone through compartment mills and from the raw grinding department the raw mixture will be pumped into storage tanks located at the feed end of the kilns.

In designing the clinker burning and cooling department advantage was taken of the slope of the ground, which permits the kilns to be installed on an elevation so the clinker will discharge from kilns directly to the coolers and discharge from the coolers directly into raw material storage at a still lower elevation. This is accomplished without elevating or conveying machinery. The heat carried off with the clinker as it discharges from the kilns into the cooler will be utilized for preheating air to be used in connection with burning of pulverized coal in the kilns. While it is intended to use hydro-electric power to start with, the kilns have been so designed and arranged that waste heat boilers can be installed at any later date, without interfering with operation.

In the finishing department the cement clinker will be handled with overhead electric traveling cranes from the discharge end of the coolers and carried to the finish grinding department, where the combined clinker and gypsum will be ground in compartment mills.

The finished cement storage will consist of a battery of silo type bins, with a combined storage capacity of 150,000 bbls. From the bottom of the silo bins cement will be drawn and elevated to tanks above automatic sacking and weighing machines installed at an elevation, permitting the sacks dropped from the machine to slide by gravity into cars. Provision will be made for loading 8 cars at one time.

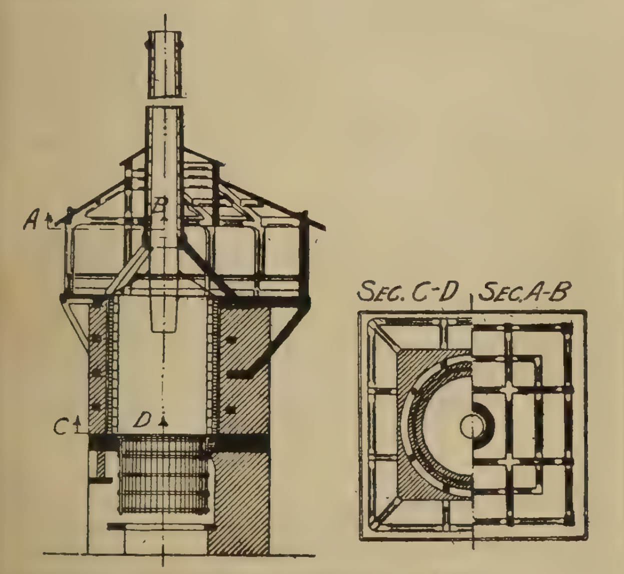
Completely equipped machine, blacksmith and electric shops are being provided so that necessary repairs will be taken care of by the organization. A completely equipped laboratory will be provided, in which operations of the plant will be controlled.

Cement Kiln with Concrete Superstructure

In Laurlano Po, District of Turin, the Italian cement and lime works of J. Gio. Ansalado e Co. has erected a cement kiln according to plans by Candlot (Paris), in which the charging platform and concrete stack are supported directly on the vertical furnace.

The accompanying cuts show a square substructure, 22 ft. by 22 ft. and 28 ft. high, built of brick, which encloses a cylindrical space 14 ft. 6 in. in diameter, with 4 discharging doors for the burned material and a vertical grate 10 in. inside the side walls.

A slightly converging cast iron extension downwards from the stack reaches some 4 ft. below the charging floor, and into the material charged into the furnace, and serves to draw the gases of combustion from the side walls towards the center of the mass, which arrangement forms the principal idea of the Candlot patents.



VERTICAL AND HORIZONTAL SECTIONS OF KILN

The charging platform is 30 ft. square and overhangs 4 ft. on each side, which is arranged by means of reinforced concrete bracket braces, as shown in the accompanying illustration. The chimney rests upon four reinforced concrete brackets 6 ft. 6 in. high, standing inclined at 45°, and forming the charging openings. The stack is 4 ft. in diameter and 52 ft. high, and the inside firebrick lining was used as the inner form in pouring the stack.

The construction of the charging platform is arranged to distribute the stresses from the four supporting brackets of the chimney, according to *Tonindustrie Zeitung,* from which the above is abstracted.

The Cement Industry in Czecho-Slovakia

Cement plants in the Czecho-Slovakian Republic have a yearly output of about 80,000 to 90,000 carloads of portland cement and thus represent a very large part of the producing capacity of the whole cement industry in the former Austrian Hungarian monarchy.

The plants at Koenigshof, Maloneric, Tschischkowitz, and Stramberg were recently constructed with kiln equipment; the plants at Mariaschein, Hodolein, and a few Slovakian enterprises employ automatic coupolas.

Koenigshof and Stramberg produce in addition a large quantity of slag cement. The Saxon-Bohemian Portland Cement plant in Tschischkowitz produces also several thousand carloads of "Extralime," which it introduces in the market under the name of "Bohemia-Cement" (Silikalit). The yearly peacetime consumption from the Czecho-Slovakian portland cement industry can be estimated to be from 50,000 to 60,000 carloads.

The result of this is, that the output of the united cemet factories in Czechoslovakia by far exceeds the consumption, and that the works subsequently have been forced to export to a large extent to the countries previous embraced in the Austrian-Hungarian monarchy.

The earlier export by the cement factories to Poland has been curtailed and the building industry is dormant, so that the present outlook for the Czecho-Slovakian cement industry is anything but promising.—*Tonindustri-Zeitung.*

Cement Making Prospects in Ceylon

Some time ago several samples of clay and lime were sent from Ceylon to the Imperial Institute in London, to ascertain if any of them were suitable for the manufacture of cement. It is now reported that some Jaffna clays are quite suitable for the purpose, says *Commerce Reports.*

The commercial aspect of the manufacture of cement in Jaffna (an island separated by a very narrow channel from the northern extremity of Ceylon) is now being examined. The main difficulty, so the Ceylon correspondent of the *London Times Trade Supplement* reports, is the high price of coal. The possibility of developing a small hydro-electric scheme to operate the plant is now being studied. Experiments are also being made to find out if palmira or coconut shells, which are known to give a good heat, could be used in place of coal.

The clays and limes of the island have not been studied systematically with a view to employing them for industrial purposes. It is generally believed that clays and limes suitable for cement manufacture are to be found in the brick and tile manufacturing centers of Ceylon. If this should prove correct, the proposed hydro-electric scheme will assist the establishment of a local cement industry.

The Twelve Hour Shift[1]

In a discussion of the present status of the great problem of the twelve hour shift and a review of the report of the Federated American Engineering Societies on the twelve hour shift in America, Charles Wadsworth 3d takes as the underlying theme, the introduction to the society's report on the subject: "The desirability of abandoning the two-shift system lies not in its extent in industry but in the fact that the 12-hour day is too long when measured by twentieth century ideas as to the proper conduct of industry. Economic considerations demanding a length of day which will give maximum production are influenced today by humanitarian considerations."

There are in this problem three points of view which we should establish before we can understand the puzzle: The point of view of the public, that of the management or employer and that of the worker.

Present Status of the Puzzle

We have the public largely passively opposed to the twelve hour day but without a sufficient active sentiment to have anything crystallized; the manufacturer inactive, principally because of the inertia of existing conditions, hesitant further because of the fear of greatly increased costs; and, finally, the laborer completely lacking in organization, largely of foreign origin, regarding his work as a necessary penance for either a comfortable old age or for the crime of having to support a family and for the most part, either unable to work shorter hours or unwilling to consider it. Therefore the twelve hour day persists and to anyone who has lived in a twelve hour shift community, the institution looms as a menace to civilization, for civilized living is impossible under it.

The report of the Federated Engineering Societies discusses the extent of a twelve hour shift in American industries, and some of the substitutes which have been tried in place of it. The work was carried out largely by Horace B. Drury.

It was found that the twelve hour shift is confined almost exclusively to the continuous process industries and these in general belong to one of three types. The first type consists of industries which employ high temperatures and cannot afford to let a large bulk of equipment cool off only to be heated up again the next day even if this were possible. There are, of course, many industries in which it takes days to heat up the equipment to a point where production is possible. These are called the "heat process" industries. To the second type belong those which because of chemical reactions cannot be stopped and started again, such as chamber sulfuric acid, soap, saponification and hundreds of others. These are the chemical industries. Finally, there are industries in which the investment and equipment is extensive and the overhead charges would be prohibitively high per unit produced if the work were not continued throughout twenty-four hours. Forty-four different industrial centers were investigated and the continuous industries grouped into four main groups. Cement and lime are placed in group I which includes iron and steel, non-ferrous metals, glass, brick and pottery.

There are nine other questions dealing largely with the change from the two shift system to some other operation of plant. The methods which the report brings to the manufacturer is: "Don't shy at three shift operation, investigate it; if it does cost more you may be more than repaid by diminishing accident, labor turnover and absenteeism, and it may not cost you anything."

It is further pointed out that such a method is very timely when the immigration and emigration statistics are studied—a net loss in 1921 of 67,000 laborers (continuous process labor). It will not only pay but it will be absolutely essential to diminish labor turnover.

The summary concludes with a word of caution: Do not change without careful preparation. A sudden change not planned and which has not enlisted the cooperation of the workers is almost certain to result in lower production. Mr. Drury struck a keynote when he mentioned the cooperation of the worker.

Appendix to the Report on the 12 hour Day in American Industry

The following is a summary of the detailed studies made in the cement and lime industries.

Cement—Better and more inclusive data exist in the cement industry than in any other industry, due to the activities of the conservation committee of the Portland Cement Association. This committee has made a very interesting comparison between the man-hours required to produce one barrel of cement in those factories on two-shift operation and in those factories on three-shift operation. The table is important and is herewith reproduced. (Table I.) The difference is pronounced and the investigator was careful to inquire whether the more progressive concerns might have gone on three shifts, leaving the less progressive on two shifts, but the conservation committee of the association believed that the difference was not due to any extraneous conditions. The present view of the association, through the chairman of its conservation committee, seems to be that a combination of two-shift and three-shift operation is at the present a little more economical than the wholly three-shift operation, but it believes that ultimately the three-shift operation will be universal.

Table 1—Comparative Labor Efficiency of 86 Portland Cement Plants in 1920
(Data Suplied by Committee on Conservation, Portland Cement Association)

Man-Hours to Produce One Barrel

Shift System	Number of Plants	Average of Group	Most Efficient Plant in Group	Least Efficient Plant in Group
Two-shift group..............	51	1.035	0.551	1.940
Three-shift group............	22	.823	.466	1.540
Two-three-shift group........	13	.756	.470	1.140

The hourly wage of the men as they went from two to three shifts was raised 6 or 7 cents an hour, so that they received slightly less than the 10-hour men, but only slightly less, and this increase in hourly wage has been more than wiped out by increased efficiency in the workers.

Lime—The lime industry has a smaller proportion of shift workers than the cement industry, with the result that the shift work is even less significant, only about 15 per cent of the men being involved. They are the ones that handle kilns, and in general they are on a two-shift basis, particularly in the East and the South. One plant is successfully running now on a three-shift basis, at the request of the workmen, and no increase in manning the kiln was necessary by a rearrangement of labor. Tables were given showing how this was worked out in practice.

The Chinwangtao Customs Inspector's report for 1921, transmitted to the Department of Commerce, states that the Chee Hain cement plant, located at Tangahan, on the Peking-Mukden Railway, north of Tientsin, China, is undergoing improvements calculated to increase the output of 1,500,000 bbls., of 375 lbs. each, per annum, which means trebling of the present output.

The C. J. Tagliabue Mfg. Co. has taken over from the Mono Corporation of America the manufacturing and selling rights of their entire line of gas-analysis instruments for use in the control of combustion and industrial furnaces.

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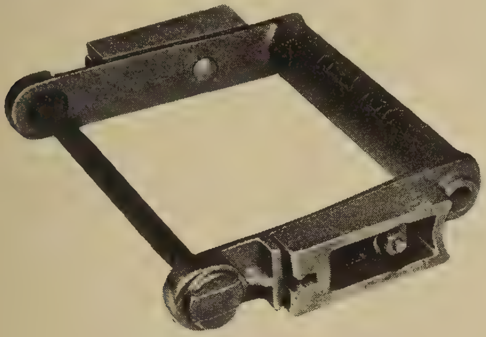
[1] Abstracted from *Chemical and Metallurgical Engineering.*

New Conveyor Chain

The accompanying illustration shows the new chain developed by the Chain Belt Co., Milwaukee, for drag conveyors, in cement mills. It is known as Rex Griplock drag chain and is equipped with a special wearing shoe, which is designed not only to give the chain longer life, but make it possible to use a lighter chain in drag conveyors.

It is well known among cement mill superintendent that ordinary malleable iron drag chain usually wears out rapidly, particularly when used in scraper conveyors. As a result some cement companies are using heavy cast steel chain for this service. This steel chain, however, is so heavy that it requires considerable power to drag it along in the trough.



Rex Griplock Chain

The new Rex Griplock drag chain retains the advantages of lighter weight and yet, because of its white iron wearing shoes, has a particularly long life. Two shoes are bolted to each link, one on each side, as shown in the illustration. They are attached in such a manner that there is no interference with the efficient operation of the chain over the sprocket wheels. The white iron of which they are made is a well-known resistant to abrasive wear.

The links themselves are the standard Griplock Conveyor links manufactured by the Chain Belt Co. for many years.

The advantages claimed for the Rex Griplock drag chain are: long wearing qualities, greater pitch accuracy and low first cost.

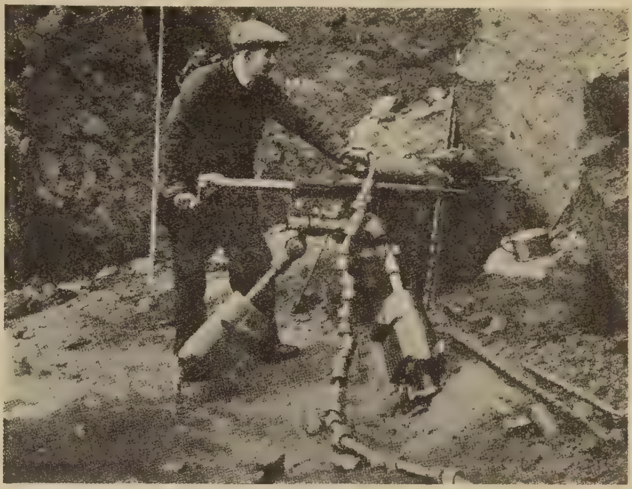
Dorman Self-Contained Dustless Wave Power Rock Drill

The new dustless wave power rock drill just announced in England, is operated by the pressure waves traveling periodically along the pipe, being fitted with a hammer element which is thrown forward by each wave of pressure. Surrounding the hammer is a space called a "capacity," filled with water, and due to the difference in diameter between the striking end and the piston end of the hammer, a displacement takes place on the forward stroke of the hammer, which compresses the water in the "capacity." As the pressure wave passes and the pressure in the line drops below the mean pressure, the force on the annulus being greater than the force on the piston end returns the hammer to the original position, ready to receive the next pressure wave.

The original discovery of power transmission by wave vibrations was made by Gogu Constantinesco, a Rumanian engineer.

The dustless wave rock drill has been designed to conform to the standard size and weight of the most modern pneumatic hammer drills used in mining.

Among the points claimed in favor of the new equipment are the following: Independent rotation of the drill steels; no splines used; any drill steel used from 1 in. to 4 in. bits with one chuck only. The water conveying the power converts the pulverized rock into liquid sludge. Drills always work on the virgin rock face.



Wave Drill at Work in Stone Quarry with Flexstel in Foreground Connecting Drill with Wave Plant

A three-drill self-contained wave power plant is permanently fixed on a steel frame trolley to run on a 2 ft. 6 in. gauge railway, and consists of a 4-cylinder Dorman petrol engine, coupled to a wave generator, through an ordinary gear-box and clutch. A saving of more than 50% in power cost alone compared wtih other power is claimed.

For the above information Concrete is indebted to W. H. Dorman & Co., Ltd., Stafford, England, manufacturers of the new equipment.

The liquid, usually water, is contained in a system of piping connecting the apparatus generating the wave motions to the machinery which applies them to useful work. Patented "Flexstel" joints are used, designed to prevent hose breakages at acute working angles.

What probably is the first application of pulverized coal to the soda ash industry is being made at the plant of the Diamond Alkali Co., Painesville, Ohio.

The company has recently authorized the Fuller Engineering Co., Allentown, Pa., to design and equip the first unit of a coal pulverizing plant to supply the soda ash dryers and the boilers with pulverized coal, the ultimate capacity of the plant being 1,600 tons of coal per day.

To take care of the first unit there will be installed 6 ft. 6 in. by 50 ft. Fuller indirect fired coal dryers, 46 in. screen type gear-driven Fuller mills, a Fuller-Kinyon distributing system for conveying the pulverized coal from the mills to the various furnace bins supplying the dryers and boilers, 3 in. pulverized coal feeders for feeding coal from the service bin to the burners, and horizontal type Fuller burners.

The fuel requirements are approximately 1,600 tons per day, serving 32 boilers of various sizes and 32 rotary dryers. Boilers and dryers are at present stoker fired. After the pulverized coal installation is made, the coal requirements will be materially reduced, it is expected, due to increased efficiencies and conomies effected by the change in the firing method.

Portland Cement Output in January

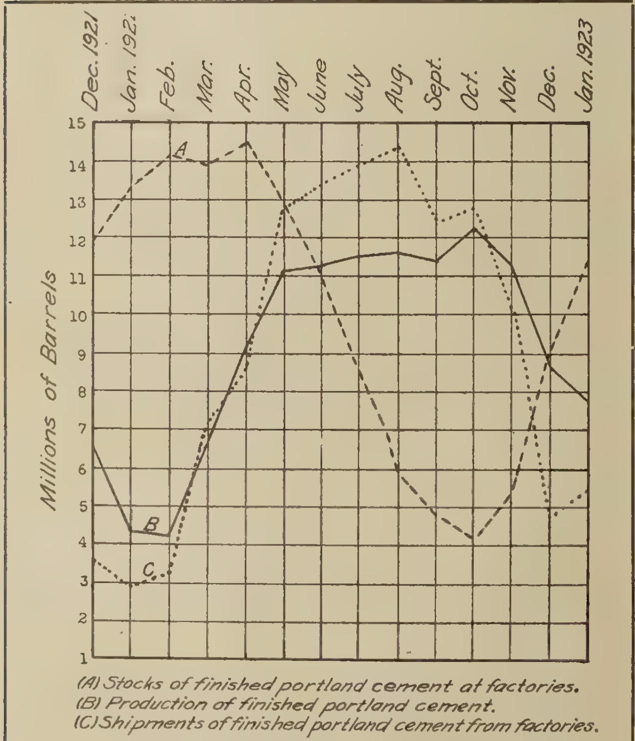
The statistics shown in the following table, prepared under the direction of Ernest F. Burchard, of the United States Geological Survey, are based mainly on reports of producers of portland cement but in part on estimates. The use of estimates was made necessary by the lack of returns from three producers.

PRODUCTION, SHIPMENTS, AND STOCKS OF FINISHED PORTLAND CEMENT IN JANUARY, 1923, AND PRECEDING MONTHS

Month	Production (barrels)		Shipments (barrels)		Stocks at end of month (barrels)	
	1922	1923	1922	1923 *	1922a	1923
January	a4,291,000	7,704,000	a2,931,000	5,419,000	13,316,000	11,426,000
February	4,278,000	....	3,285,000	....	14,142,000	....
March	6,685,000	....	7,002,000	....	13,848,000	....
1st quar.	15,254,000	....	13,218,000	....	....	....
April	9,243,000	....	8,592,000	....	14,470,000	....
May	11,176,000	....	12,749,000	....	12,893,000	....
June	11,245,000	....	13,470,000	....	10,718,000	....
2nd quar.	31,664,000	....	34,811,000	....	....	....
July	11,557,000	....	13,850,000	....	8,433,000	....
August	11,664,000	....	14,361,000	....	5,746,000	....
September	11,424,000	....	12,444,000	....	4,724.000	....
3rd quar.	34,645,000	....	40,655,000	....	....	....
October	12,287,000	....	12,854,000	....	4,149,000	....
November	11,349,000	....	10,167,000	....	5,320,000	....
December	8,671,000	....	4,858,000	....	9,142,000	....
4th quar.	32,307,000	....	27,879,000	....	....	....
	113,870,000	....	116,563,000	....	....	....

(a) Revised.

Stocks of clinker, or unground cement, at the mills at the end of January amounted to about 4,009,000 bbls. compared with 2,849,000 bbls. (revised) at the beginning of the month.



MONTHLY FLUCTUATIONS IN PRODUCTION, SHIPMENTS, AND STOCKS OF FINISHED PORTLAND CEMENT.

The Bureau of Foreign and Domestic Commerce, of the Department of Commerce, reports that the exports of hydraulic cement in December were 106,938 bbls., valued at $288,565; of this total 105,817 bbls., valued at $281,881, was portland cement, of which was sent to Cuba, 47,840 bbls.; to the other West Indies, 12,750 bbls.; to South America, 26,639 bbls.; to Central America, 8,155 bbls.; to Mexico, 7,821 bbls.; to Canada, 1,323 bbls.; and to other countries, 1,469 bbls. The total exports of hydraulic cement in 1922 were 1,127,845 bbls., valued at $3,206,201.

The statistics of imports of hydraulic cement from September 22, 1922, to January 31, 1923, and of exports of hydraulic cement in January, 1923, are not available.

IMPORTS AND EXPORTS OF HYDRAULIC CEMENT, BY MONTHS, IN 1921 AND 1922

Month	Imports (barrels)		Exports (barrels)	
	1921	1922	1921	1922
January	14,678	17,036	225,561	70,725
February	18,269	5,157	84,230	82,421
March	7,631	1,597	97,302	103,556
April	1,540	10,855	93,009	75,412
May	2,035	2,521	82,409	100,068
June	1,657	14,179	100,831	96,263
July	3,455	958	81,091	119,491
August	10,988	56,757	84,538	105,156
September	5,177	(b) 42,641	84,668	78,615
October	11,448	(c)	79,871	80,402
November	20,112	(c)	71,214	108,798
December	25,327	(c)	96,290	106,938
	122,317	....	1,181,014	1,127,845

(a) Compiled from records of the Bureau of Foreign and Domestic Commerce.
(b) Imported during period September 1-21, inclusive. Imports during period September 22-30 are not available.
(c) Imports in October, November, and December, 1922, are not available.

STATISTICS BY PORTLAND CEMENT ASSOCIATION

During January 1923 the mills of the country apparently operated at about 65% of capacity with a total estimated production of 7,657,000 bbls. of finished cement which is the largest output for that month on record and nearly 80% greater than a year ago.

Shipments, which were much heavier than in any preceding January, amounted to 5,500,000 bbls., an increase of 89% over January 1922. Thus stocks of finished cement in manufacturers' hands increased approximately 2,100,000 bbls. and at the end of January stood at 11,285,000 bbls. compared with an average of 10,725,000 bbls. for the five-year period 1919-1923.

PRODUCTION, SHIPMENTS AND STOCKS OF PORTLAND CEMENT
January, 1923
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UNITED STATES GEOLOGICAL SURVEY PRODUCING DISTRICTS	Number of Mills*	CEMENT PRODUCTION JANUARY			CEMENT SHIPMENTS JANUARY			STOCKS at end of JANUARY		
		1923	1922	1921	1923	1922	1921	1923	1922	1921
1 Eastern Pennsylvania, New Jersey and Maryland	R 21 E 1 N	2,111	1,134	752	1,101	701	508	3,272	3,371	2,360
2 New York	R 8 E N	311	143	372	128	93	121	690	917	763
3 Ohio, Western Pennsylvania and West Virginia	R 9 E 1 N	631	403	348	428	205	187	1,002	1,247	961
4 Michigan	R 11 E 1 N	188	213	57	174	104	82	638	848	617
5 Illinois, Indiana and Kentucky	R 8 E 2 N 1	1,129	587	793	995	325	339	1,668	2,356	1,925
6 Virginia, Tennessee, Alabama and Georgia	R 7 E N	530	305	280	473	288	247	230	302	256
7 Eastern Missouri, Iowa and Minnesota	R 9 E N	1,081	387	460	555	191	207	1,931	1,891	1,418
8 Western Missouri, Nebraska, Kansas and Oklahoma	R 10 E 1 N 2	386	363	238	420	189	163	844	907	675
9 Texas	R 5 E N	372	231	180	353	182	134	290	319	189
10 Colorado and Utah	R 5 E N	78	20	73	86	30	39	178	168	155
11 California	R 6 E 3 N 1	673	505	498	721	562	398	189	485	185
12 Oregon, Washington and Montana	R 8 E N	167	0	47	116	56	54	425	297	328
TOTAL	R 107 E 9 N 4	7,657	4,294	4,098	5,550	2,935	2,572	11,285	13,321	10,198

Figures represent barrels, 000 omitted. One barrel equals four sacks. 847

* R—Mills reporting.
E—Mills estimated
N—Mills not operating

Production of cement in January is restricted to some extent by reason of the fact that mills in some sections using the wet process of manufacture are unable to operate because of weather conditions. Also, numerous mills close down for repairs made necessary by the inherently rough usage to which equipment is subjected throughout the year.

The large shipments during January of this year are undoubtedly due to more general building activities, as a result of an open winter in many sections, than has been usual during winter months. Also partially to the fact that in some localities a greater amount is being stored for future use when heavy seasonal demands usually aggravate an already overtaxed transportation situation.

Lime in 1922

About 3,528,000 short tons of lime, valued at $33,057,000, were sold in the United States, including Hawaii and Porto Rico, in 1922, according to an estimate made by the United States Geological Survey, from reports received from the principal producers. This quantity is more than 39% greater than that sold in 1921 and only 1% less than that sold in 1920. The average value per ton in 1922 is estimated at $9.37. In 1921 it was $9.83 and in 1920 it was $10.52. Of the 42 States and Territories that produced lime in 1922, 5 showed a decrease and 37 an increase in output as compared with 1921. This showing is in marked contrast with that for 1921, when the output of 34 States decreased and that of only 8 increased. The States that showed decrease in 1922 are all small producers of lime and serve markets that are largely influenced by local demand.

The sales of hydrated lime in the United States in 1922 were estimated at 1,125,300 short tons, an increase of 42% over those in 1921 and the largest yet reported. Of the 31 states that reported an output of hydrated lime in 1922 only three showed a decrease. The estimated value of the hydrated lime sold in 1922 was $10,850,000, an average value per ton of $9.64. The average value in 1921 was $9.36.

Economic Conditions

Reports indicated that about the same number of plants were in operation in 1922 as in 1921, but some of the small plants from which no reports were received may have shut down on account of the scarcity and the high cost of coal. The use of wood to help conserve coal was noted by the manufacturers. It is noticeable, however, that farmers who had not burned lime for several years started their kilns again in 1921 and 1922 and burned small quantities in field kilns, as the lime so made was cheaper than that which could be bought in the market. Labor appeared to be plentiful, but cars for transportation were not always available. The demand for lime was obviously better in 1922 than in 1921, but producers report that the market was very irregular. Prices fluctuated greatly throughout the year, but showed a decided downward trend. Lime for construction undoubtedly made the largest increase in production, and chemical lime also increased appreciably, but it is doubtful whether agricultural lime made any increase whatever.

Construction Lime

Though a few producers reported that the demand for construction lime was the same as in 1921, or even less, the greater number reported a much better demand and increases ranging from 3 to 75%. Some reported increases of 100 to 200%. Most producers reported that the first ten months of the year was the time of greatest demand; others reported a poor market early in the year and improvement late in the summer and in the fall. The average prices in some states were higher and in others lower than in 1921, but the average for the country was doubtless lower.

Chemical Lime

Chemical lime showed decided improvement in demand during the year, according to the manufacturers of lime of this class, but not so decided an improvement as construction lime. Though increases of 5 to 70% and exceptionally of 125 and 160% were reported there were more reports of fair demand and about the same demand as in 1921 than in the reports for construction lime. The last half of the year appeared to be a time of great improvement in the chemical lime trade in 1922. The sales of refractory lime (dead-burned dolomite), used in patching and lining basic open hearth furnaces, increased from 107,664 short tons in 1921 to over 300,000 tons in 1922.

Agricultural Lime

Agricultural lime did not show the same encouraging increase as the other two classes of lime, chiefly because of the farmers' inability to buy lime. Some reports showed that there was an increase in the demand for agricultural lime, and that the production could not equal the demand on account of scarcity of fuel, but it is very doubtful whether the production for 1922 will exceed that of 1921.

The accompanying table shows the estimated quantity of hydrated lime and the estimated quantity and value of total lime sold in states reporting sales of more than 20,000 tons. The figures for 1921 are given for comparison.

Lime Produced in the United States in 1922 (Estimated)

State	1922 (Estimated)				Percentage of increase or decrease in 1922	
	Hydrated Lime (Short tons)	Total lime Short tons	Total lime Value	Average Value Per ton	Hydrated	Total
Ohio	536,000	717,000	$6,700,000	9.34	+ 55	+ 52
Pennsylvania	170,000	700,000	5,521,000	7.89	+ 25	+ 37
Missouri	58,000	201,400	2,017,000	10.01	+ 26	+ 27
Wisconsin	21,570	187,100	1,524,500	8.15	+ 40	+ 51
West Virginia	44,650	178,000	1,515,000	8.51	+ 17	+ 49
Alabama	15,500	165,000	1,284,000	7.78	+120	+ 51
Virginia	16,000	156,000	1,250,000	8.01	+ 43	+ 40
Massachusetts	(a)	156,000	1,997,000	12.80	+114	+ 26
Tennessee	31,600	129,000	1,008,000	7.81	+ 23	+ 38
Maine	(a)	127,300	1,892,000	14.86	+ 11	+ 41
Indiana	46,000	117,800	1,084,000	9.20	+ 55	+ 30
New York	(a)	105,000	981,000	9.34	+ 98	+ 55
Illinois	12,700	76,700	837,000	10.91	+ 15	+ 32
Maryland	43,000	70,000	550,000	7.86	+ 28	+ 8
California	(a)	60,000	743,000	12.38	+ 84	+ 42
Texas	20,770	52,000	505,000	9.71	+ 6	+ 17
Michigan	(a)	50,000	430,000	8.60	+ 51	+ 4
Connecticut	(a)	(a)	(a)	12.00	.....	.....
Vermont	(a)	46,200	513,000	11.10	+ 25	+ 41
Minnesota	(a)	27,200	249,000	9.15	+ 41	+ 23
Washington	(a)	25,500	302,000	11.84	— 19	+ 44
Undistributed	109,510	180,800	2,154,500	.....	.....	.....
	1,125,300	3,528,000	$33,057,000	9.37	42	39

(a) Included in undistributed.

President G. S. Brown of the Alpha Portland Cement Co. submitted a report at the recent annual meeting of stockholders of the company showing that the past year had been most successful and that the outlook is bright for the year 1923.

The following directors were elected: James H. Lockhart and J. M. Lockhart, Pittsburgh; Louis H. Porter, New York city; G. S. Brown and Frank McKelvy, Easton; F. M. Coogan, Phillipsburgh, N. J.; C. K. Boettcher, Denver, Colo.; C. H. McNider, of Mason City, Ia. and C. A. Irvin, Chicago, Ill.

The directors organized by electing G. S. Brown, president; Frank G. McKelvey, F. M. Coogan and C. A. Irvin, vice presidents; John J. Matthes, Phillipsburg, treasurer; F. G. Lyons, Easton, assistant treasurer; Robert S. Gerstell, secretary; W. E. Viets, Chicago, Ill., assistant secretary and assistant treasurer.

Convict Labor Cement Plant Proposed

Governor William E. Sweet, newly elected governor of Colorado, a millionaire and former banker, during the campaign suggested that methods be found for employing the surplus convict labor to the end that the State may receive some profit and the prisoners be helpfully employed.

Two years ago, he stated, a bill was introduced in the legislature providing for a state owned cement plant for the purpose of employing convict labor, the product of the plant to be sold to the state and the municipalities thereof. This bill failed to pass by a narrow margin. The State now owns a large quantity of cement rock sufficient to run a plant for many years. The construction of such a plant according to the governor would save hundreds of thousands of dollars in the cost of road construction.

The governor mentioned what other states were doing with convict labor and how the wages allowed the unfortunate men were placed in a savings bank to the individual's credit or sent to some dependent, thus making the man a wage earner and a provider, and added: "When we estimate the moral good which would result from trying to lead these men back to lives of self respect and self support, the experiment is well worth trying. It is my belief that private enterprise would not be appreciably affected by such a plan and I request your earnest consideration of it."

The establishing of a state cement and crushed stone plant provided for in bill No. 97 introduced into the State Senate of Colorado and providing for an appropriation of $450,000 for this work out of state highway funds, is opposed in a resolution adopted by the manufacturers' Bureau, Civic and Commercial Association of Denver. The two reasons given for the opposition to the measure are: first, that use of the proposed appropriation from the highway fund would impair the usefulness of the road work now being accomplished in Colorado; and secondly, that the State would be entering into the manufacturing business, contrary to the spirit of the state government, and would intend to manufacture material which the bureau is convinced could be purchased at less cost in the open market, than the cost of manufacture by the State.

Acme Company Elects Officers

A special meeting of the board of directors of the Acme Cement Corp. was held at the office of the corporation near Alsen, N. Y., February 13. A change in the officers of the company was the chief business. The resignation of C. H. Breerwood of Philadelphia, who had been president and general manager of the company since November 1919, was accepted. Mr. Breerwood will remain interested in the company as a stockholder and director. At the present time he is enjoying a much needed vacation of several months in California.

The position of general manager vacated by Mr. Breerwood has been occupied since January 15 by Robert S. Schultz of East Orange, N. J., who was elected a director at this meeting. Mr Schultz is a graduate of Columbia School of Mines of 1906. Since that time he has had broad and successful experience in the engineering field as a miner and for the last 10 years in the manufacture of portland cement. He was recently connected with the W. S. Tyler Co. of Cleveland, manufacturers of screening machinery.

The position of president vacated by Mr. Breerwood is now occupied by Charles B. Watt, who was formerly vice president of the company. Mr. Watt who lives in Lancaster, Pa., will not devote his full time to the Acme affairs.

Donald B. Watt of Catskill, who has been secretary of the company since November, succeeded his brother as vice president.

L. G. McConnell, New York city, formerly Eastern sales manager of the Atlas Portland Cement Co. has been treasurer of the Acme company since November, 1922, and is in charge of the financial and sales departments.

In addition to the above officers, several new executives have recently joined the operating staff. C. E. MacNabb is superintendent in charge of power and maintenance. E. T. Comly succeeds P. W. Troxell as superintendent of the quarry. Mr. Comly formerly held a similar position at the Atlas company's mill in Hannibal, Mo., and at the Continental mills in St. Louis.

With the exception of Messrs. Breerwood and Troxell, the operating organization of last year remains the same. H. F. Kickline is assistant manager and chemist; R. D. Shaefer, mill superintendent; J. D. Somers, head storekeeper; Francis B. Cummings, head accountant.

Emmett Grobe and Charles Holmes are mill foremen. Thomas Malloy is machine shop foreman and Archie Zellner is repair foreman. George Van Buren is head electrician, Ray Burnett is bag house foreman and William Countryman, labor foreman.

The plant will take on a full crew and begin operations early in March. One hundred fifty men are now employed and about 75 more will be required when the mill opens.

Pioneer in Cement Industry Passes

H. J. Seaman, the co-inventor with E. H. Hurry of the famous Hurry-Seaman process of rotary kiln manufacture of portland cement, and for many years general superintendent of the Atlas Portland Cement Co., died at his home in Ventnor, N. J., on Feb. 9, at the age of 64 years.

Mr. Seaman had been in ill health for some time but was reported improving shortly before his death.

Hearing on Class Rates

The printed digest of the proceedings of the trunk line mileage scale hearing is now ready for distribution by the State Law Reporting Co., 233 Broadway, New York city. In the week of October 23, 1922, the Trunk Line Association held a hearing to consider the question of establishing a scale of class rates within trunk line territory upon a mileage basis, as a substitute for the class rates now in force.

Many of the largest shippers in trunk line territory were represented and presented statements on the subject. The Interstate Commerce Commission, several state commissions, chambers of commerce and other similar organizations took part in the proceedings.

Some of the cement and lime companies are numbered among the organizations, whose representatives attended the hearing.

Net prices on cement to the contractor in carload lots were reported by the Universal Portland Cement Co. on February 6 as follows: Chicago, $2.20 per bbl.; Duluth, $2.14 per bbl.; Pittsburgh, $2.24 per bbl.; Detroit, $2.47 per bbl.

Men and Mills

Notes from the Field

H. L. Knappenberger has severed his connection with the British Columbia Cement Co., Victoria, B.C., by whom he has been employed for the past 12 years as chief chemist and later as superintendent of the Tod Inlet plant, and is now in active charge of the construction of the Sun Portland Cement Co.'s plant at Lime, Ore. Mr. Knappenberger is one of the organizers of the Sun company.

A plant having a daily capacity of 1000 bbls. and using the wet process is being built and it is the company's expectation to have the plant in operation by August of this year. Mr. Knappenberger will act as superintendent of the plant upon its completion.

After having conducted a number of tests with producer gas and pulverized coal for use in rotary lime kilns the Charles Warner Co. is installing producer gas equipment in the new rotary kiln plant at Bellefonte, Pa. Producer gas has been used in the past few years on the Cedar Hollow rotary kiln of the Charles Warner Co.

The Olympic Portland Cement Co. will start its second kiln as soon as the weather is more favorable. This will add 25 men to its payroll. The company reports that the cement demand is good and that it promises to be at least as good as it was in 1922.

It has recently been announced that the Colorado Portland Cement Co. contemplates building a cement plant at Loveland, Colo., where the company owns a rock deposit, the estimated cost of which is approximately $1,500,000.

A cement plant representing an investment of about $1,000,000 in the vicinity of Sheffield, Ala., has been practically arranged for according to an announcement made by S. W. Kendall of Meridian, Miss.

It is planned to erect the plant at the old Kellar quarry adjoining the site of the United States nitrate plant No. 1 west of Sheffield, on the Southern railroad.

The preliminary plans call for 3 units, each having a capacity of 2000 bbls. of portland cement daily. The possibility of a kiln for the manufacture of lime on a large scale is also suggested.

George W. Kreamer, Allentown, was elected president of the Atlas Society of the Atlas Portland Cement Co. and replaces E. Sommers, the retiring president. Paul G. Bower is secretary and Harold Bower treasurer.

The Coplay Cement Manufacturing Co. is considering a project to erect a number of houses on the site of the base ball grounds in the vicinity of the plant. The project has advanced considerably and an early start is anticipated.

F. D. Wood, formerly superintendent of the Hercules Cement Co. at Stockertown, has accepted a position with the Coplay Cement Manufacturing Co., Coplay, Pa.

Ira Gilkyson, at one time manager of the Phoenix Portland Cement Co.'s plant died in Philadelphia in January. Mr. Gilkyson formerly resided in Nazareth, leaving that place about five years ago.

The seven months' safety contest that started May 1, 1922 between divisions Nos. 1, 2 and 3 of the Louisville Cement company's plant at Milltown, closed December 31, 1922, with high honors for each division. Division No. 1 had a perfect score, division No. 2 had 74 hours lost and division No. 3 had 15 hours lost. There were 8 no-accident months at Milltown in 1922. During the year 1923 three safety contests lasting four months each will be held at Speed. Six divisions will compete.

The plant of the New York and New England Cement & Lime Co. resumed operations about the middle of January after a shut down of a little over two weeks, while needed repairs were made.

Officials are reported to be very optimistic over the future and expect 1923 to eclipse all others in the amount of cement manufactured and shipped.

The presentation in the legislature of the state of California, of a bill for the construction of a state owned cement plant is looked upon with more than ordinary interest by the people of the county having the largest deposit of limestone, suitable for raw material.

An appropriation of $5,000,000 for erection of a state cement plant for the state of Illinois is provided in a bill prepared for the Senate by Senator Meents, and recommendation as to location will shortly be made by the University of Illinois which, it has been reported, has been conducting a series of experiments.

The Sandusky Cement Co. which broke ground last June for its new portland cement plant at Silica, Ohio, expects to be operating the new plant by April 1. The engineering and construction work is being handled by the company's own engineering department and F. G. Herman, general superintendent, is responsible for the design and construction of the plant.

The Ohio Hydrate & Supply Co., Woodville, Ohio, is adding a 450-ton lump lime bin and a ground lime bin for material which will not be hydrated, in addition to new grinding, milling and hydrating machinery.

The officials of the Kansas Portland Cement Co., a subsidiary company of the International Cement Corp., which recently purchased the plant of the Bonner Springs Portland Cement Co., have been announced, according to the *Kansas City Times*. They are: H. Struckmann, president; H. C. Koch, vice president; C. M. Peters, treasurer; Baxter D. McClain, secretary; and J. A. Lehaney, general manager.

The company will revive the Sunflower brand of cement in Kansas and its product will bear that name.

As compensation for the death of his son, William Wetzel, who was killed at the Tidewater Portland Cement Co.'s plant at Union Bridge last August, Hanson Wetzel, his father, has been awarded $1500 to be paid in weekly installments, it having been brought out at the hearing before the chairman of the State Industrial Accident Commission that the son's death cut off a large part of the family's income.

William Wetzel was burned to death as the result of an explosion believed to have been caused by spontaneous combustion.

At a recent meeting of the stockholders of the Signal Mountain Portland Cement Co., the following directors were elected to serve for the fiscal year of 1923: J. L. Caldwell, Chattanooga; Charles Closz, Webster City, Ia.; Charles Howard, Chattanooga; J. P. Hoskins, Chattanooga; Ralph Law, Chattanooga; D. F. McPherson, Chicago; W. A. Sadd, Chattanooga; John L. Senior, Chicago; F. A. Stephenson, Mason City, Ia.; C. S. Steward, Chattanooga; R. G. Wright, Knoxville.

The changes in the directorate are the additions of D. F. McPherson, C. S. Steward, J. L. Caldwell, R. G. Wright.

It was reported by John L. Senior, president, that the builders of the machinery are progressing with the work to a point where they can start deliveries within a short time, and that the erection of structural steel would start immediately.

Following the meeting, the stockholders visited the plant site and inspected the progress of the work.

At a later meeting of the directors the following officers were elected: W. A. Sadd, chairman of board; John L. Senior, president; C. S. Steward, vice president; J. L. Caldwell, vice president; Ralph A. Law, secretary; and J. P. Hoskins, treasurer.

Prospects for an even better year than 1922 during which a number of cement companies passed all previous production records, is looked for in the cement industry. Reports from cement mills in the Pennsylvania district indicate that companies in that section already have sufficient orders booked to keep the mills busy until next fall. Stock houses are reported empty in various districts. As the product becomes available it is being stored to meet the heavy demand expected in the spring when extensive road building programs and building construction programs will be started.

With the resumption of nearly all of the mills in the Lehigh district, additional crews were put to work early in January on the Lehigh and New England railroad, at important transfer points, due to an increase of business on the Catasauqua and Fogelsville branch of the Philadelphia and Reading Ry. Another crew was put on starting out of Allentown daily and doing shifting over the branch road.

Although embargoes continued in effect at the first of the year, preventing numerous shipments over trunk line railroads from the mills in the Lehigh region, a heavy tonnage was being shipped, especially in view of the cold weather. Bituminous coal was received during the latter part of December by the mills in the Lehigh region in a volume probably never before equaled. Coal storage space at the plants was so completely filled that in some cases, cars had to be held in the railroad yards until they could be unloaded. A feature of the shipments was the very heavy tonnage placed on the cars, one car reaching its destination with 106 tons aboard. That such large amounts of coal should be stored was looked upon as a indication of a busy year ahead for the mills, with possibly anticipation of another strike in the mining districts.

Some 50 foreigners who left Northampton, Pa., for their native land a year ago returned to the cement region and owing to scarcity of labor were immediately given work at the Lawrence, Reliance and Atlas mills.

That the mills in the Lehigh cement region anticipated one of the best years in recent history, is evidenced by the fact that hardly sufficient time was found to shut down for the customary annual repairs made necessary by the continuous use of the machinery. Where mills were shut down, the suspension of operations was reduced to a minimum as stock houses were empty and practically the only cement in storage was being held awaiting shipment orders.

Nine of the plants of the Alpha Portland Cement Co. were reported in operation in January. These plants included the two in operation at Martin's Creek, Pa., and the plant recently purchased from the Continental Cement Co., It was reported also that the Atlas Portland Cement Co. would soon be on its full production basis in all its mills throughout the country. Work was being rushed in January on repairs to the No. 3 plant at Northampton, which has a capacity of 10,000 bbl. per day. With the starting of mill No. 3, the Atlas company would again be on full production basis for the first time in a number of years.

The mills of the Lehigh Portland Cement Co. were closed down only when necessary for repairs and it was intended to keep the plants in operation throughout the winter with the exception of the short period when repairs were necessary.

Reports from the plants in the West were also optimistic. The plant of the Superior Portland Cement Co., Concrete, Wash., started grinding cement after a brief shut down over the holidays. The outlook was reported very promising and orders were far above the average for the season of the year. The company was still handicapped by the shortage of cars. Although the car situation was considered somewhat improved over the earlier period, much improvement was looked for before it would be back to normal. More men were being employed on repair work and new construction than were required to operate the plant.

In order to better serve Western customers and properly meet the increasing demands from cement, lime and gypsum and crushed stone plants for Pennsylvania single roll crushers and hammer crushers, the Pennsylvania Crusher Co. has recently opened a district office in Chicago, in charge of C. S. Darling. Temporary quarters have been secured at the Monadnock Building, but after May 1, the office will locate in the new Illinois Merchants Bank Building.

Single roll crushers for primary breaking and hammer crushers for secondary and finer crushing as manufactured by the Pennsylvania Crusher Co. have been operating successfully under severe conditions for many years in cement, gypsum, lime, flux and other stone crushing plants.

Machinery for coal preparation has been one of the principal specialties of the company. In addition to hammer crushers and single roll crushers, this apparatus includes Bradford breakers for the initial crushing of mine run coal. Pennsylvania coal crushing machinery is used in cement and lime plants for the preparation of stoker feed and for the initial breaking of coal for gas producers and preparatory to pulverizing for rotary kiln feed.

The projected new cement plant in the vicinity of Pocatello is being held in abeyance and will be until the market in that section justifies an additional plant. In 1922 the Bakers plant of the Ogden Portland Cement Co., Brigham City, Utah, operated only slightly more than four months, which is taken as an indication that the cement business in this intermountain section does not justify an additional cement plant.

The new overhead crane in the clinker storage building of the Superior Portland Cement Co. is practically installed. The building is also nearing completion and should be ready for use about the time the last of the machinery is in place.

A large blast was recently set off at the quarry of the Bath Portland Cement Co., near Bath, Pa., under the direction of Fred B. Franks, mill manager. Forty-three 6-in. holes had been drilled to a depth of 95 ft. to 105 ft. Each hole was filled with Trojan blasting powder. Enough rock was dislodged to supply the plant with raw material for some time.

Edgar Fleischman of Easton, Pa., recently returned after spending six months on a business trip to Japan and China. Mr Fleischman is employed by the Bates Valve Bag Co., of Chicago and installed Bates machines in the Japanese cement mills.

The Coplay Cement Manufacturing Co. has built a fence, consisting of concrete posts supporting heavy cable and wire netting, along its property in the vicinity of the quarries on the road near West Coplay. The fence is more than 500 ft. long and is designed to protect traffic from the danger of the quarries.

A number of houses have been built at Ormrod by the Lehigh Portland Cement Co., and ground has been staked out for about twenty-five more, These houses will be occupied by employes of the company.

A Delaware charter has been granted to the Ohio Portland Cement Co., Wilmington, Delaware, to manufacture portland cement, as announced by the Corporation Service Co., the capital being $3,000,000.

The production of the former Continental Portland Cement Co.'s plant, which has been purchased by the Alpha Portland Cement Co., will be increased to 4,500 or 5,000 bbls. per day. The probable erection of new buildings to cost $500,000 has been announced.

A suit has been filed at Clayton asking for a permanent injunction to prevent quarrying of rock for the manufacture of cement by blasting at the Continental plant and to stop the spread of cement dust from the plant over surrounding country. The complaint states that there are 4000 residents within a radius of two and a half miles of the plant, and that frequent blasting in the quarry makes their lives miserable and does considerable damage to the property. It is further charged that the dust from the plant endangers life and health.

The Signal Mountain Portland Cement Co. has closed a contract for two 46-in. Fuller mills and a Fuller-Kinyon transport system for its new coal plant being erected near Chattanooga, Tenn.

Lindley C. Morton, president of the Phoenix Portland Cement Co., who is moving his headquarters to Birmingham for five or six months, reports that splendid progress is being made with the Phoenix company's new plant at Birmingham and that it is expected that the new plant will be in shape to ship cement the first of May. The company expects to break all records for speed in the building although construction will be of reinforced concrete throughout and of the very best type.

Mr Harry W. Tupman, Jr., formerly with the Portland Cement Association, is now connected with the Besser Sales Co., 53 W. Jackson Blvd., Chicago, Ill.

The Hermitage Portland Cement Co. is now planning to have a 2000-bbl. daily capacity plant in operation near Nashville, contracts having already been let for the machinery and a site purchased in North Nashville, according to the *Nashville Banner.*

Sufficient limestone has been obtained to last the company for 70 years and clay will be obtained from nearby pits. The wet process will be used.

The Allis-Chalmers Manufacturing Co. of Milwaukee, has been awarded the contract for the machinery and it is reported that the management of the plant will be under R. T. Miller, formerly of the Pittsburgh and United States testing laboratories.

The officers of the Hermitage company will be John C. Vance of Chattanooga, president; T. L. Herbert, Jr. vice president; R. D. Herbert, secretary-treasurer.

The construction of the plant will be financed by the issuance of 15,000 shares of preferred stock at par, and an equal number of shares of common stock of no par value, and $425,000 of bonds. Not more than 6000 shares of the preferred stock will be issued. It will pay a dividend of 8% cumulative. One share of common stock will be given as a bonus for each two shares of the preferred stock issued.

At the recent annual meeting of stockholders of the Petoskey Portland Cement Co., the by-laws were amended to provide for nine directors instead of five as has been the case in past years. W. N. Andrews, J. B. Andrews, Louis Seelbach and A. R. Moore were elected to the enlarged board. The older members, J. B. John, J. C. Buckbee, Homer Sly, Joseph A. Magnus and John L. A. Galster, holding over as directors, were elected for a term of five years.

The officials are reported to have announced their policy for the current year which is to secure the maximum amount of cement production and curtail enlargements and betterments. With approximately 130,000 bbls. of cement now on hand, the company expects to have a stock amounting to 250,000 bbls. by spring, and good contracts for the coming year are reported.

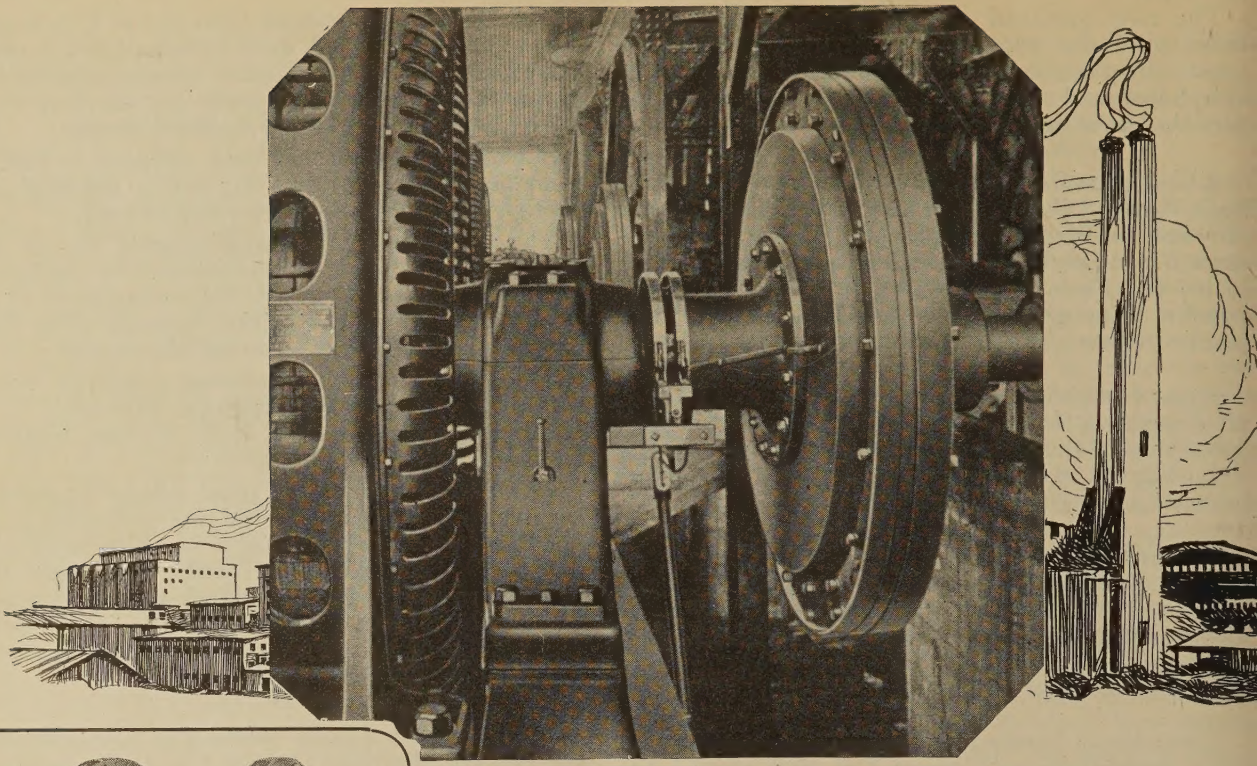
Litigation over a site for the proposed state owned cement plant for South Dakota is reported to have been recently terminated leaving everything in readiness for actual starting of the work of constructing the plant as soon as all preliminary details have been worked out.

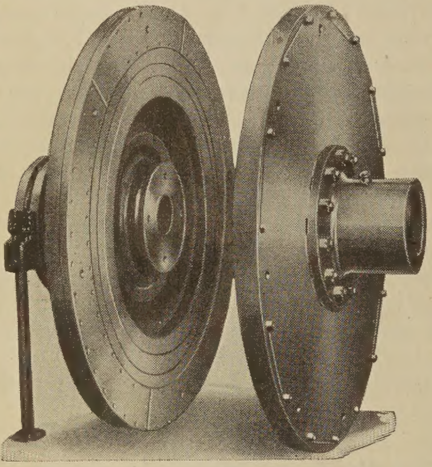
The State Cement Commission is anxious to go ahead with the work of installing the equipment and Governor McMaster who is chairman of the commission, especially desires that work be rushed so that the plant can start production at an early date.

The commission has been advised that Federal Judge Elliott has dismissed the suit brought in his court in protest against the condemnation of the land under the right of eminent domain and a resolution has been adopted approving the acts of the secretary in negotiations so far made. Authority was given the secretary of the commission to purchase a site for the plant at Rapid City. The purchase involves an expenditure of $24,000 and is to be completed upon approval of abstracts by the attorney general.

CEMENT CHEMIST, thoroughly experienced and capable, desires a change of position, preferably in a foreign country. Can supply a Laboratory crew if desired. Box 1452, c-o CONCRETE, 1807 E. Grand Blvd., Detroit, Mich.

WANTED—one six by twenty-two feet tube mill, also one ball mill seven or eight feet in diameter. Must be in good condition. Give full particulars first letter. National Cement Co., Empire Bldg., Birmingham, Ala.





The Simplicity of the C-H Magnetic Clutch is Self-Evident.

C-H Magnetic Clutches are of the simplest construction, requiring small space, and are easily controlled by a small switch.

There are two parts, one carrying magnetic windings, which when energized pull the other half of the clutch into engagement. There are no toggles, links, or levers. They do not grab like a jaw clutch, but the torque of the magnetic clutch automatically builds up to full value at a gradual rate.

In starting up, the motor carries no load, the line being connected through the clutch after speed has been attained.

Have You Seen Any of These Clutch Installations?

In cement plants in the East, West, South and North—in far-away India and Australia—and in Monterey, Mexico, C-H Magnetic Clutches are in use.

The growing list of cement plants in which these Clutches are used is indicative of the widespread recognition of their value by cement plant interests. Have you seen any of them or inquired about their performance?

Name.	Address.	No. of Clutches.	Size of Clutch.
Alpha Portland Cement Co.	Easton, Pa.	18	48″
Alpha Portland Cement Co.	Ironton, Ohio	3	60″
Alpha Portland Cement Co.	LaSalle, Ill.	3	60″
Alpha Portland Cement Co.	Martin's Creek	1	60″
Asano Portland Cement Co.	Japan	2	60″
Atlas Portland Cement Co.	New York, N. Y.	2	54″
Bessemer Portland Cement Co.	Youngstown, Ohio	7	60″
Bessemer Portland Cement Co.	Youngstown, O.	1	48″
California Portland Cement Co.	Colton, Calif	2	60″
Cemento Portland Monterey	Monterey, Mex	1	48″
Commonwealth Portland Cement Company	Sydney, Australia	2	66″
Dexter Portland Cement Co.	Nazareth, Pa	1	40″
Diamond Portland Cement Co.	Middlebranch, Ohio	4	60″
Dolomite Products Co.	Maple Grove, Ohio	1	54″
Dwarka Portland Cement Co.	Bombay, India	1	44″
Dwarka Portland Cement Co.	Bombay, India	4	60″
Ford Motor Company	Detroit, Mich.	2	60″
Golden States P. G. Co.	Ore Grande, Calif	1	60″
Gwalior Cement Company	Bombay, India	2	48″
Gwalior Cement Company	Bombay, India	1	40″
Hudson Valley P. C. Co.	New York, N. Y.	2	60′
Huron Portland Cement Co.	Detroit, Mich.	10	60″
Indiana Portland Cement Co.	Greencastle, Ind	1	60″
Jubbulpore P. C. Company	Jubbulpore, India	1	44″
Jubbulpore P. C. Company	Jubbulpore, India	2	60″
Liberty Potash Company	Salt Lake City, Utah	1	60″
Lehigh Portland C. Co.	Birmingham, Ala	5	48″
Lehigh Portland C. Co.	Birmingham, Ala	5	44″
Lehigh Portland C. Co.	New Castle, Pa	3	40″
Lehigh Portland C. Co.	West Copley, Pa	1	40″
Missouri Portland C. Co.		1	60″
National Development Co.	Manila, P. I.	2	60″
National Development Co.	Manila, P. I.	1	40″
Nebraska Cement Company	Superior, Neb	2	60″
Newaygo Portland Cement Co.	Newaygo, Mich	1	60″
Oklahoma Portland Cement Co.	Ada, Okla	8	60″
Petoskey Portland Cement Co.	Petoskey, Mich	4	60″
Phoenix Portland Cement Co.	Birmingham, Ala.	4	60″
Sandusky Portland Cement Co.	Cleveland, O.	6	60″
Southwestern Portland C. Co.	Los Angeles, Calif	3	60″
Western States Portland C. Co.	Independence, Kans.	2	66″
Wilson (N. Z.) Portland C. Co.	Auckland, N. Z.	2	60″

THE CUTLER-HAMMER MFG. CO.
Magnet and Clutch Dept. Works: MILWAUKEE and NEW YORK
Offices and Agents in Principal Cities

C-H
CUTLER-HAMMER

MAGNETIC CLUTCHES